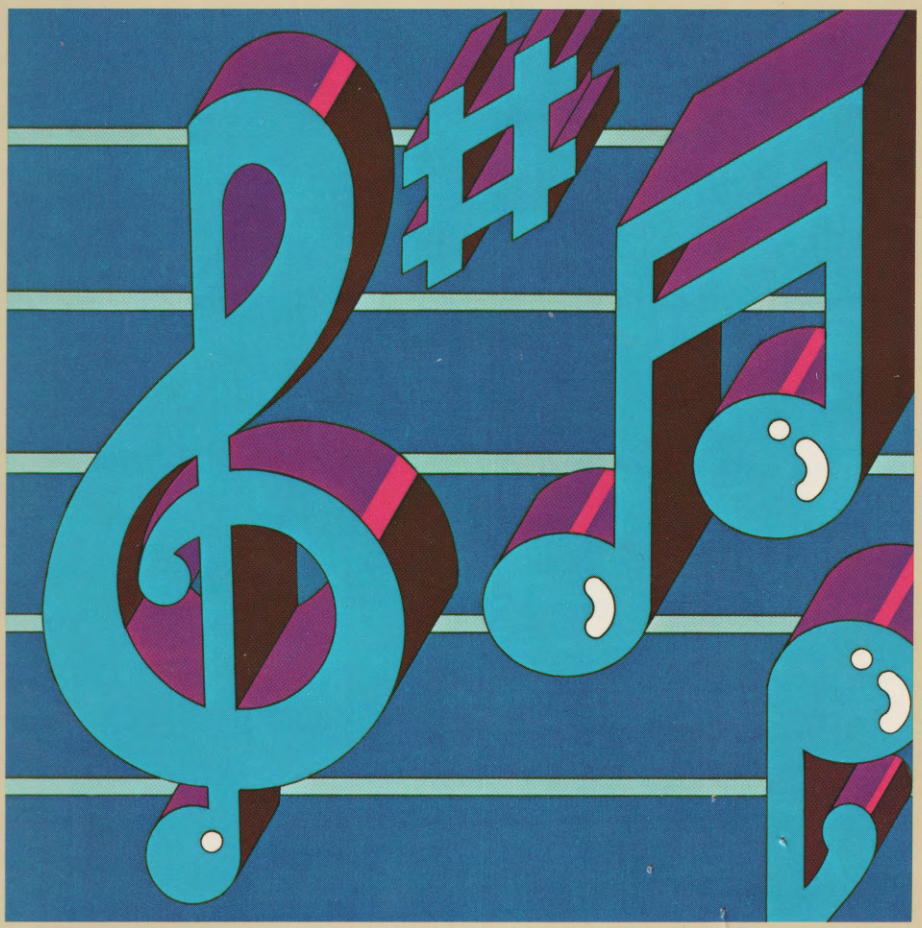
Apple II

Apple Music Theory

Music Fundamentals from MECC



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CHAPTER 1
USING THE PROGRAMS

INTRODUCTION

Apple Music Theory is a set of programs that provide drill and practice for the skills of reading and listening to music. Each of the programs allows you to choose the level of difficulty of the problems, so as your skills improve, you can work on more difficult exercises.

The programs fall into four categories: Introduction, Terminology and Notation, Rhythm, and Pitch. Introduction is a program that demonstrates some of the things that the Apple will do in the other programs, such as generating sound and drawing pictures on the Apple's screen. Terminology and Notation contains four programs that give you practice in identifying notes, key signatures, and musical terms. In the category of Rhythm, the four programs provide drills in recognizing note types, in counting, in comparing written and performed rhythm, and in playing rhythmic patterns. Pitch covers four subcategories: interval recognition, sight and sound correlation, scales, and chords.

The main function of this manual is to teach you how to use the programs. Chapter 1 and Appendix A explain how to use the programs and how to set up the Apple II system. The manual assumes that you already know something about the music theory covered by each program (e g., knowing the names of the notes, recognizing intervals by ear, knowing how to identify key signatures, etc.) Although Appendix B does include some background information on music theory, it is just an overview and doesn't cover everything you might learn from a textbook or a course on music theory.

Chapter 2 and Appendices B and C serve a secondary function: to describe the educational framework surrounding the programs--prerequisites, objectives, and evaluation of the success of each learner. This is primarily for teachers but may be helpful to anyone who wants to use these programs to practice some of the fundamentals of music theory in a structured way.

This manual assumes that your Apple II system is correctly set up. If you're not sure that the system is ready to go, see Appendix A.

WHAT YOU NEED

To use the Music Theory programs, you need:

- an Apple II with at least 32K of memory, an Autostart ROM, and an Applesoft card or Language card
  OR an Apple II Plus with at least 32K of memory

- at least one disk drive with a disk controller card containing 16-sector PROMs,

- a video monitor (or television), and

- the Music Theory Diskette.

For reference, you should have on hand a copy of the DOS manual.

STARTING THE PROGRAMS

If you're reading this manual for the first time, try the procedures while you read about them--you'll learn how to use the programs faster that way. These programs are very easy to use and are very patient in helping you practice any of the music theory they describe.

You received two diskettes labeled "Apple Music Theory". Put one diskette in a safe place (away from heat, magnets, and dust). If the first copy of the diskette is damaged, you can use the second copy.

With most Apple II systems, the Music Theory programs start automatically as soon as you put the diskette in the disk drive and turn on the Apple. This process of starting the program is known as "booting". Use the following steps to boot the Music Theory diskette.

1) Place the diskette marked "Apple Music Theory" in the disk drive as shown in the DOS manual.

If you have more than one disk drive, put the diskette in Drive 1. If you hold the diskette in your right hand, with your thumb over the label, you're almost certain to insert the diskette correctly. Remember to close the drive door after inserting the diskette.

2) Turn on the Apple.

If the disk drive's IN USE light comes on, and the drive makes whirring and clicking noises, then your system is automatically booting the diskette, and you can skip to step 3.

If the disk drive doesn't start, see the DOS manual for details on the standard procedure for booting a diskette.

3) If you have a Language Card, the screen displays the message:

LOADING APPLESOFT INTO LANGUAGE CARD

The screen should then show:

```
A P P L E   M U S I C   T H E O R Y
MUSIC FUNDAMENTALS FROM MECC

MINNESOTA EDUCATIONAL
COMPUTING CONSORTIUM

AUTHOR: LINDA BORRY
COPYRIGHT  MECC, 1979
```

If this doesn't appear on the screen even though steps 1 and 2 worked properly, read Appendix A. Note that one step in booting the diskette varies, depending on which slot contains the disk controller card.

THE MUSIC MENUS

After the title screen, Music Menu I should appear

```
APPLE MUSIC THEORY
MUSIC MENU I
1 AURAL INTERVALS   6 NAME THE NOTE
2 COUNTING          7 NOTE TYPES
3 ENHARMONICS       8 VISUAL INTERVALS
4 INTRODUCTION      9 TERMS
5 KEY SIGNATURES    0 MUSIC MENU II

TYPE THE NUMBER OF THE PROGRAM YOU WANT.
(IF YOU NEED DESCRIPTIONS, TYPE 'D'.
TO END, TYPE 'END'.) ■
```

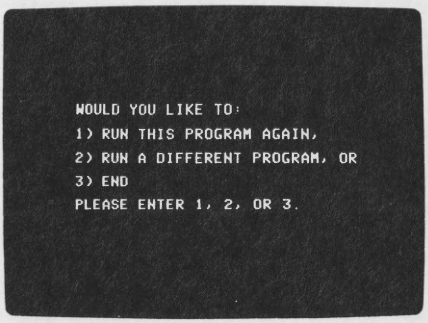
The term "menu" is often used in computer programs to indicate a list of choices. From Music Menu I, you may choose to run one of the nine programs, to get a brief description of any program, or to get Music Menu II. From Music Menu II, you may choose to run one of its nine programs, to get a brief description of any program, or to return to Music Menu I.

To select one of the programs from the menu, type its number, then press the RETURN key. If you type the wrong number, press the left-arrow key to erase it. Then type the number you want.

If, for any reason, the program suddenly stops and leaves a blinking cursor and a prompt (> or]), type
RUN HELLO
and press the RETURN key to get Music Menu I. Or reboot the system using the same steps you followed before.

AN INFORMAL INTRODUCTION

From Music Menu I, type
4
and press the RETURN key to run a program that gives you a short introduction to the other programs and to the Apple. The introduction appears as a series of displays on the Apple's screen. After you read each screen, press RETURN to get the next screen. When you finish the introduction, the last screen will give you these choices



This is the Rerun Menu, which lets you run a program again and again. Type the number of your choice, remembering to press RETURN after the number. When you type
2
Music Menu I reappears on the screen. When you type
3
the Music Theory program quits, and the screen displays a prompt (either], >, or *) showing you that the Apple has returned to Applesoft, BASIC, or the Monitor.

For every Music Theory program, you follow this same procedure of selecting a program, running it, and then having the three choices--running it again, running a different program, or quitting.

For now, type
2
to return to Music Menu I.

DESCRIPTIONS OF THE PROGRAMS

From Music Menu I, you can get a brief description of each program by typing
D
and pressing RETURN. The screen then asks you to

TYPE THE NUMBER OF THE PROGRAM YOU
WANT DESCRIBED

For example, type
D
and press RETURN, then type
1
and press RETURN. By now, you probably have learned that you press the RETURN key to complete each message you send to the Apple. So from now on, when we tell you to type or press a key, you'll know that means to type or press the key AND press RETURN.

At the bottom of the screen, you should see this description

```
          APPLE MUSIC THEORY
             MUSIC MENU I

 1 AURAL INTERVALS   6 NAME THE NOTE
 2 COUNTING          7 NOTE TYPES
 3 ENHARMONICS       8 VISUAL INTERVALS
 4 INTRODUCTION      9 TERMS
 5 KEY SIGNATURES    0 MUSIC MENU II

 AURAL INTERVALS PROVIDES DRILL AND
 PRACTICE ON RECOGNIZING INTERVALS BY
 EAR.

 DO YOU WANT ANOTHER DESCRIPTION?
```

If you want another description, type
Y
then type the number of the program for which you want a description.
If you don't want another description, type
N
Music Menu I will reappear with its original choices.

RUNNING NOTE TYPES

Now you are ready to run a music theory program. In this section of the manual, we'll guide you through a few programs, then describe the unique features of the rest. For the most part, the programs themselves give you all the instructions you need to use them. But we'll point out some details that make it very easy to learn to use them.

From Music Menu I, type
7
to run Note Types. The screen will say first
GETTING THE PROGRAM...
then

```
NOTE TYPES

INSTRUCTIONS? (YES OR NO) ■
```

Type
Y
to get the first screenful of instructions

```
THIS PROGRAM PROVIDES DRILL ON
RECOGNIZING DIFFERENT NOTES AND RESTS.

THE PROGRAM WILL PRINT A NOTE OR REST
AND YOU WILL BE ASKED TO IDENTIFY
THE TYPE OF NOTE OR REST - E.G. WHOLE,
HALF, DOTTED QUARTER, ETC.

PRESS 'RETURN' TO CONTINUE.■
```

Press RETURN to view the rest of the instructions. The next screen of instructions is

```
YOU WILL ALSO BE ASKED HOW MANY BEATS
THAT NOTE OR REST SHOULD BE HELD IF A
QUARTER NOTE IS HELD ONE BEAT.

PRESS 'RETURN' TO CONTINUE.
```

After you press RETURN again, you should see

```
YOU MAY BE DRILLED ON ANY OF THE
FOLLOWING:

1.) NOTES ONLY
2.) RESTS ONLY
3.) A MIXTURE OF NOTES AND RESTS

WHICH WOULD YOU LIKE? (ENTER A NUMBER
1 - 3)
```

Type
1
to choose notes only. The screen will then show the abbreviations you must type in response to the questions about note types

```
WHEN IDENTIFYING NOTES, USE THE
ABBREVIATIONS GIVEN BELOW:

ABBREVIATION  NOTE OR REST TYPE
------------  -----------------
      W        WHOLE
      H        HALF
      Q        QUARTER
      E        EIGHTH
      S        SIXTEENTH
     DW        DOTTED WHOLE
     DH        DOTTED HALF
     DQ        DOTTED QUARTER
     DE        DOTTED EIGHTH

THE ABBREVIATIONS ARE DISPLAYED ON THE
SCREEN WHILE YOU ANSWER THE QUESTIONS.

PRESS 'RETURN' TO CONTINUE.
```

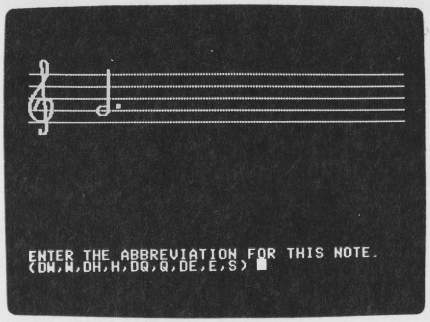
Press RETURN for more instructions

```
AFTER IDENTIFYING THE NOTE TYPE
YOU WILL BE ASKED HOW MANY BEATS THAT
NOTE OR REST SHOULD BE HELD IN A TIME
SIGNATURE IN WHICH A QUARTER NOTE
IS HELD FOR ONE COUNT.

PRESS 'RETURN' TO CONTINUE.
```

Then press RETURN again for the final instructions

```
IF A NOTE IS HELD ONLY PART OF A BEAT
ENTER THE NUMBER OF BEATS AS A DECIMAL
E.G. AN EIGHTH NOTE WOULD RECEIVE .5
BEATS.

HOW MANY PROBLEMS DO YOU WANT? ■
```

Type the number of problems you want, for example, 5. The screen will present the first problem, which will look like this one



Here are two charts listing the responses to use when you're typing the answers to the problems:

Note	Abbreviation	For this Number of beats	Type this:
whole	W	six	6
half	H	four	4
quarter	Q	three	3
eighth	E	two	2
sixteenth	S	one and one-half	1.5
dotted whole	DW	one	1
dotted half	DH	three quarter	.75
dotted quarter	DQ	one-half	.5
dotted eighth	DE	one-quarter	.25

Type your answer, and the screen tells you how you did. It will say

CORRECT
PRESS 'RETURN' TO CONTINUE

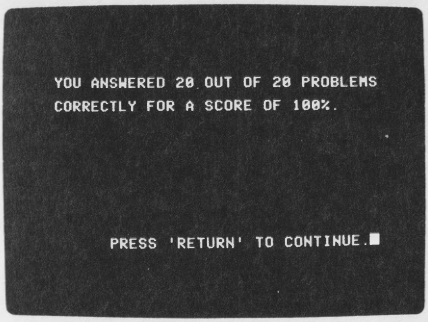
or it will say

NO, THE CORRECT ANSWER IS ...
PRESS 'RETURN' TO CONTINUE

and fill in the correct answer. Press RETURN to get the rest of the problem:

HOW MANY BEATS DOES THIS NOTE RECEIVE
(6, 4, 3, 2, 1.5, 1, .75, .5, .25)?

The screen again tells you if your answer is correct. When you have finished all the exercises, the screen tells you how you did. Because each problem has two parts, your score for Note Types will show 2 correct answers for each problem you answered correctly (e.g., if you asked for 1Ø problems, you get a score for 2Ø problems). For example,



After you press RETURN, the screen presents the Rerun Menu. For now, type
2
to run another program. The screen should say

GETTING THE MENU PROGRAM...

then present Music Menu I again. From Music Menu I, let's look at the programs for Terminology and Notation.

TERMINOLOGY AND NOTATION

The four programs under Terminology and Notation are Name the Note, Enharmonics, Key Signatures, and Terms. All of these programs are on Music Menu I.

NAME THE NOTE

This program gives you practice in identifying notes in both treble and bass clefs. You must specify which clef you want to practice and if the exercises will include sharps, flats, and ledger lines.

From Music Menu I, type
6
to run Name the Note. The screen will display

```
NAME THE NOTE

THIS IS A DRILL ON NAMING NOTES.
YOU WILL SEE A NOTE PRINTED, AND YOU
HAVE TO GIVE THE CORRECT NAME FOR THAT
NOTE.

PRESS 'RETURN' TO CONTINUE.!
```

After you press RETURN, the screen displays

```
THERE ARE FIVE LEVELS OF PROBLEM
DIFFICULTY AVAILABLE - THESE ARE:

LEVEL 1 - ALL TREBLE CLEF, NO SHARPS,
          FLATS, OR LEDGER LINES

LEVEL 2 - ALL BASS CLEF, NO SHARPS,
          FLATS, OR LEDGER LINES

LEVEL 3 - MIXTURE OF TREBLE AND BASS
          CLEFS, NO SHARPS, FLATS OR
          LEDGER LINES

LEVEL 4 - MIXTURE OF TREBLE AND BASS
          CLEFS, SOME LEDGER LINES, NO
          SHARPS OR FLATS

LEVEL 5 - MIXTURE OF TREBLE AND BASS
          CLEFS, SOME LEDGER LINES AND
          SOME SHARPS AND FLATS

WHICH LEVEL DO YOU WANT?
```

Type the number of the level of difficulty you want. For this example, type
1
The screen will ask

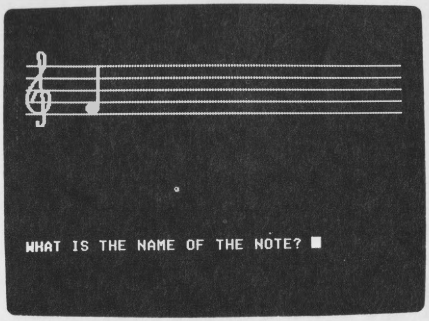
HOW MANY PROBLEMS WOULD YOU LIKE?

Type the number of problems you want.

When you select difficulty level 5, the screen gives directions for typing your answers

```
WHEN ANSWERING, REMEMBER THAT:

THE '#' IS THE SHARP SIGN.
THE '*' (ASTERISK) IS THE FLAT SIGN.

HERE ARE SOME EXAMPLES OF ANSWERS:
ANSWER       YOU TYPE
------       ---------
  A              A
A-SHARP          A#
A-FLAT           A*

      PRESS 'RETURN' TO CONTINUE.
```

After you read those directions and type the number of problems you want, press RETURN to get the first exercise. For example, if you've selected difficulty level 1, you might get a problem like this

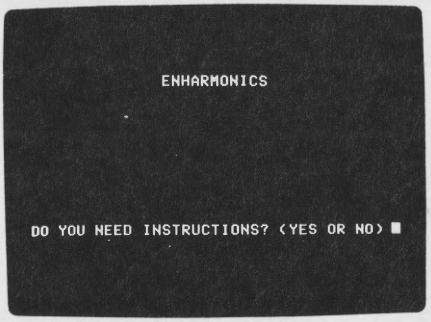


After you type the name of the note, the program tells you whether or not your answer is correct. After you answer all the problems, the program tells you how you did, then presents the Rerun Menu. Type
2
to return to Music Menu I.

ENHARMONICS

This program lets you practice identifying notes that are equivalent in pitch, but that may be written differently (e.g., G-flat or F- sharp). You may choose whether or not to have exercises that use double sharps and double flats.

To run this program from Music Menu I, type
3
The screen will say



Follow the same procedures you used for Name the Note--that is, type Y for yes, N for no, remembering to press RETURN after typing your response, and press the space bar when the screen directs you to.

Whether or not you ask for instructions, the program displays a screen showing what to type to indicate flats (*) and sharps (#). Then the program asks you

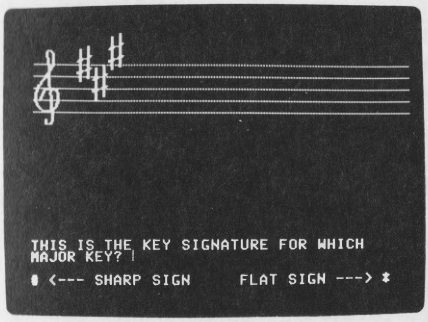
HOW MANY PROBLEMS WOULD YOU LIKE?

For each problem, the program tells you how you did, giving the correct answer if you made a mistake. And, at the end, the program tells you how many problems you answered correctly. It then presents the Rerun Menu.

KEY SIGNATURES

This program provides drills on recognizing major and minor key signatures. You may choose to answer problems on only major keys, only minor keys, or both major and minor keys. Type
5
to run this program from Music Menu I.

The program offers instructions on how to use it, lets you choose which type of keys and how many problems you want, and reminds you to use the # for sharp and the * for flat. Then the screen draws a staff with a key signature for you to identify. For example,



You get two tries to answer the problem correctly. However, your final score will show only the number of problems you answered correctly on the first try. The program keeps track of how many problems you answer correctly and tells you your score at the end. Then it presents the Rerun Menu.

TERMS

This program quizzes you on the definition of 57 commonly used musical terms, such as arpeggio. You may choose one of three levels of difficulty.

Type
9
to run this program from Music Menu I. Type the number to indicate which set of terms you want, then type the number of problems you want. The screen shows directions for typing your answer to the problem and presents the first problem, for example,

```
                ARPEGGIO
                --------

A. PLAYING THE NOTES OF A CHORD
   QUICKLY, ONE AFTER ANOTHER
B. BECOME GRADUALLY SLOWER

C. GRADUALLY GET LOUDER

WHAT IS THE CORRECT ANSWER - A, B, OR C?
■
```

You have one chance to answer correctly for each musical term. The program lets you know how you did on each item and on the whole set. Then it presents the Rerun Menu.

To use the rest of the Music Theory programs, follow the same steps you've just been using. Those steps are

1. Select a program from the menu by typing its number

2. Read or skip the directions on how to use the program

3. Choose the level of difficulty (or the type of problems) and the number of problems you want

4. Answer the problems

5. See how you did on the problems

6. Choose from the Rerun Menu which program to run next

The rest of this chapter describes only the unique features of the remaining Music Theory programs.

RHYTHM

In the category of rhythm are four programs: Note Types, Counting, Rhythm, and Rhythm Play. Note Types and Counting are on Music Menu I. Rhythm and Rhythm Play are on Music Menu II.

NOTE TYPES

If you have been following the examples in this manual, you've already run Note Types. Here is a little more information about the program.

This program tests your ability to recognize different types of notes and rests. It includes whole, half, eighth, quarter, and sixteenth notes and rests, as well as dotted versions of those notes and rests (except for sixteenth notes and rests). Note Types also asks you to tell how long the note or rest should be held if a quarter note receives one beat. You may choose to answer problems on only notes, only rests, or both notes and rests.

Because each problem has two parts, your score for Note Types will show two points for each problem you answered correctly (e.g., if you answered 1Ø problems correctly, you get 2Ø points).

COUNTING

This program provides drill on time signatures, note and rest types, and counting. The screen displays a measure that needs to be completed by adding one note or rest. You must determine the type of note or rest that should be added. You must choose the time signatures for the problems. You may select any combination of these time signatures:

2	3	4	5	6	3	6	9	12
4	4	4	4	4	8	8	8	8

You must also use abbreviations for the type of notes--these are the same abbreviations you used for Note Types. You get one chance to answer each problem correctly. If you make a mistake, the program will show you the correct note or rest.

GETTING MUSIC MENU II

The next program, Rhythm, is on Music Menu II. To run Rhythm, or any of the other programs on Music Menu II, type

Ø

to select Music Menu II from Music Menu I. Music Menu II should appear on the screen. It looks like Music Menu I with different programs offered as choices.

```
          APPLE MUSIC THEORY
             MUSIC MENU II

1 FIND THE HALF      6 SEVENTHS
2 MISSING NOTE       7 TRIADS
3 RHYTHM             8 WHOLE-HALF
4 RHYTHM PLAY        9 WRONG NOTE
5 SCALES             0 MUSIC MENU I

TYPE THE NUMBER OF THE PROGRAM YOU WANT.
(IF YOU NEED DESCRIPTIONS, TYPE 'D'.
TO END, TYPE 'END'.)
```

Use this menu the same way you use Music Menu I. Type the number of the program you want to run, then press RETURN. For example, to run Rhythm, type

3

then press RETURN. The screen displays the message,

GETTING THE PROGRAM...

when it's getting a program for you.

RHYTHM

Rhythm helps you to practice comparing written and performed rhythmic patterns. For each problem, the screen shows a staff containing a rhythmic pattern. The Apple plays three patterns and you decide which of the patterns you heard matches the one on the screen. You may listen to the three patterns as many times as you like before typing your answer. If you choose the wrong pattern and want to hear the correct pattern, the Apple will play the correct pattern if you press the R key. At the beginning of the program, you specify one of three levels of difficulty for the problems.

RHYTHM PLAY

This program, which is on Music Menu II, lets you use the Apple keyboard to practice rhythmic patterns. You may select one of three levels of difficulty. For each problem, the screen displays two measures of music. The first measure always contains four quarter notes. The second measure varies from problem to problem. After looking at the two measures, to produce the rhythmic pattern you see, tap the N key as if the Apple keyboard were an instrument. The first measure you play (four quarter notes) sets the tempo for the two measures--you may play the patterns at almost any tempo. If you play the pattern incorrectly, the screen will show you what you played, and the Apple will play the pattern correctly.

PITCH

The category of Pitch includes four subcategories: interval recognition, sight and sound correlation, scales, and chords. Within the four subcategories are nine programs:

Subcategories and Programs for Pitch

Interval Recognition	Sight and Sound Recognition
Aural Intervals	Missing Note
Visual Intervals	Wrong Note
Scales	**Chords**
Whole-Half	Triads
Find the Half	Sevenths
Scales	

AURAL INTERVALS

This program, which is on Music Menu I, provides drill in recognizing intervals by ear. The Apple plays two pitches and you must identify the interval between them. You select how many types of intervals will be played and whether the notes are to be played low note to high note or high note to low note. You may hear the interval as many times as you like before you answer the question. If you give a wrong answer, the screen displays the right answer. You may then hear the interval again.

VISUAL INTERVALS

This program, which is on Music Menu I, lets you practice recognizing intervals by sight. The screen shows two notes on a staff, and you determine the interval between the notes. You specify the maximum number of sharps and flats for the problems, and select the intervals that you want to practice. If you give a wrong answer, then the screen shows you the right answer.

MISSING NOTE

This program is on Music Menu II, along with the rest of the programs about Pitch. Missing Note provides drill in elementary melodic dictation. The screen shows a staff with a melodic pattern of four notes and a space. The space represents a missing note, which may occur anywhere in the pattern. After the Apple plays the pattern, you must identify the missing note by name. You specify how many sharps or flats the key signature has and the maximum size of the intervals in the pattern. You may hear the pattern as many times as you like before answering. You get two tries to name the missing note. After you answer, the screen displays the correct note.

WRONG NOTE

This program helps you practice comparing written and performed pitch patterns. The Apple plays a pattern of five notes, which you see on the screen. One of the notes is played off either a whole step or a half step. You must decide which note was played wrong. You specify the maximum number of sharps or flats in the key signature and the maximum size of the intervals in the pattern.

WHOLE-HALF

This program provides drill in hearing the difference between whole and half steps. The Apple plays two pitches, and you must determine if the interval between them is a whole step or a half step. You may hear each interval as many times as you like.

FIND THE HALF

Find the Half provides aural drill in finding the half step in a series of whole steps. The Apple plays a series of from three to five notes. You specify how many notes are in the series. With the exception of one interval, the intervals are whole steps. You determine which interval is the half step, and type the number of the note played just before the half step. For example, if the half step occurs between notes 3 and 4, you type 3 . You may hear the series as many times as you like before answering.

SCALES

Scales gives you practice in identifying types of scales: major, minor (harmonic, natural, and melodic), and modal (dorian, phrygian, lydian, and mixolydian). You specify whether or not to include modal scales in the problems. The Apple plays the scale both ascending and descending. You may hear the scale as many times as you like before typing your answer. You get two tries to answer correctly. If your answer is wrong both times, the screen tells you the right answer, and you may listen to the scale again.

TRIADS

Triads provides drill in recognizing arpeggiated major, minor, augmented, and diminished triads. You decide whether or not to include augmented and diminished triads in the problems, and if the root of the triads is to be fixed. The Apple plays the triad as many times as you like before you type your answer. You get one try for each problem. If you answer incorrectly, the right answer appears on the screen.

SEVENTHS

Sevenths helps you practice identifying by ear arpeggiated major, minor, dominant, half-diminished, and fully-diminished seventh chords. You decide whether or not to hear half- and fully-diminished seventh chords, and if you want the same root note for all the problems. The Apple plays the arpeggiated chord as many times as you want before you type your answer.

CHAPTER 2
A LITTLE STRUCTURE

The purpose of this chapter is to present a framework for using the music theory programs. Although Chapter 1 teaches you how to use the programs, it does not describe when to use them or how to tell when you have completed a program. So Chapter 2 includes a suggested sequence of instruction and some guidelines for evaluation.

Whether you are a teacher using these programs as part of a course, a student learning music theory on your own, or you already know most of the content covered in these programs--but want to practice your skills--you can use this chapter to plan which programs to use first. You can also look at the evaluation forms, which present a system for keeping track of progress.

To review the objectives and prerequisites for each program, see Appendix B, which gives some background for each of the programs.

SEQUENCE OF INSTRUCTION

Here is a suggested sequence of instruction, divided into 9 levels. The learner first does level one, then moves on to level two, etc. Notice that each level in the sequence may cover a few of the levels of difficulty of a program, and or it may cover all levels of difficulty of a program.

LEVEL ONE

NOTE TYPES (all levels)
NAME THE NOTE (all levels)
ENHARMONICS (all levels)

LEVEL TWO

TERMS (level 1)
KEY SIGNATURES (major only)
COUNTING (all levels)
AURAL INTERVALS (major and minor 2nds)
VISUAL INTERVALS (2nds)
WHOLE-HALF (all levels)

LEVEL THREE

WRONG NOTE (2nds)
MISSING NOTE (2nds)
RHYTHM (level 1)
RHYTHM PLAY (level 1)
AURAL INTERVALS (3rds, and a mix of 2nds and 3rds)
VISUAL INTERVALS (3rds, maximum of 1 sharp of flat)
KEY SIGNATURES (minor only)

LEVEL FOUR

WRONG NOTE (3rds, maximum 1 sharp or flat)
MISSING NOTE (3rds, maximum of 1 sharp or flat)
RHYTHM (level 2)
RHYTHM PLAY (level 2)
AURAL INTERVALS (4ths and 5ths)
VISUAL INTERVALS (4ths, maximum of 1 sharp of flat)
KEY SIGNATURES (all levels)

LEVEL FIVE

WRONG NOTE (4ths, maximum 1 sharp or flat)
MISSING NOTE (4ths, maximum 1 sharp of flat)
RHYTHM (level 3)
RHYTHM PLAY (level 3)
FIND THE HALF (3 notes)
TERMS (level 2)
VISUAL INTERVALS (5ths, maximum 1 sharp of flat)

LEVEL SIX

WRONG NOTE (5ths, maximum 2 sharps or flats)
MISSING NOTE (5ths, maximum 2 sharps or flats)
FIND THE HALF (4 notes)
VISUAL INTERVALS (6ths, maximum 3 flats or sharps)
AURAL INTERVALS (sixths)
TRIADS (major and minor only, both fixed and random root)

LEVEL SEVEN

WRONG NOTE (6ths, maximum 3 sharps or flats)
MISSING NOTE (6ths, maximum 3 sharps of flats)
FIND THE HALF (5 notes)
VISUAL INTERVALS (7ths, maximum 4 sharps or flats)
AURAL INTERVALS (7ths, and mixture of 6ths and 7ths)
TRIADS (all types, both fixed and random root)

LEVEL EIGHT

WRONG NOTE (7ths, maximum 4 sharps or flats)
MISSING NOTE (7ths, maximum 4 sharps or flats)
SCALES (major and minor)
SEVENTHS (major, minor, dominant, both fixed and random root)
AURAL INTERVALS (all intervals)
TERMS (level 3)

LEVEL NINE

SCALES (major, minor, and modal)
SEVENTHS (major, minor, dominant, half diminished, fully diminished, both fixed and random root)
VISUAL INTERVALS (7ths, maximum 6 flats and sharps)
WRONG NOTE (7ths, maximum 6 flats or sharps)
MISSING NOTE (7ths, maximum 6 flats or sharps)

The chart on the following page shows the levels of instruction for each program.

SUGGESTED SEQUENCE OF PROGRAMS BY LEVEL OF INSTRUCTION

PROGRAM	LEVEL 1	2	3	4	5	6	7	8	9
Aural Int.		maj/min 2nds	3rds 2nd&3rds	4ths 5ths		6ths	7ths 6th&7ths	all	
Counting	all								
Enhar-monics	all								
Find the half					3 notes	4 notes	5 notes		
Key sig.		maj	min	all					
Missing note (sharps/flats)			2nds	3rds 1	4ths 1	5ths 2	6ths 3	7ths 4	7ths 6
Name the note	all								
Note types	all								
Rhythm	(difficulty)	1	2		3				
Rhythm play	(difficulty)	1	2		3				
Scales								maj min	maj,min, modal
Sevenths								maj,min dom	maj,min, dom, dim
Terms (diff.)	1				2		3		
Triads						maj/min	all		
Visual int. (sharps/flats)		2nd	3rd 1	4th 1	5th 1	6th 3	7th 4		7th 6
Whole-half	all								
Wrong note (sharps/flats)			2nd	3rd 1	4th 1	5th 2	6th 3	7th 4	7th 6

EVALUATION

One purpose of evaluation is to tell how well you are achieving a particular objective. For these programs, we've defined the evaluation objective very generally--to reach a "mastery percentage" for each level of each program. (Appendix B contains more specific objectives for each program.)

This section of the manual presents a system for keeping track of progress toward that evaluation objective. The section includes two sample forms and a description of how to complete them. If you are following only your own progress, you may want to fill in the forms in Appendix C as you do each program. (Appendix C contains a copy of a form for each program.) If you are following the progress of a number of learners, you may want to make enough copies of those forms so that each learner has a copy to use.

TWO SAMPLE FORMS

The directions for these forms assume that you are completing the forms to follow your own progress. We'll start with the form for the first program of level one--Note Types.

NOTE TYPES

NAME NUMBER OF PROBLEMS

MASTERY PERCENTAGE

INPUT	SCORES	MASTERY
ALL NOTES	| | | | | | | | | |	| |
ALL RESTS	| | | | | | | | | |	| |
NOTES & RESTS	| | | | | | | | | |	| |

To fill in this form, you must

- decide what percentage indicates mastery of the content and fill in that percentage next to "mastery percentage"
- under "mastery", put the date or a check mark in the box to indicate that you have reached the mastery percentage
- decide how many problems are enough to cover the content, and fill in that number next to "number of problems"
- run the program answering the same number of problems at each of the three levels, filling in your percentages until you reach the percentage shown under "mastery"

For example, when you've finished Note Types, your form might look like this:

NOTE TYPES

NAME J.B.GOODE NUMBER OF PROBLEMS 20

MASTERY PERCENTAGE 90

INPUT	SCORES									MASTERY
ALL NOTES	100									*
ALL RESTS	80	100								*
NOTES & RESTS	90									*

The second sample form is for Wrong Note. In addition to the mastery percentage, number of problems, and scores, you must fill in how many sharps and flats you use, and the greatest interval you used. When you finish Wrong Note, your evaluation form might look like the sample on the next page.

All the other forms in Appendix C ask for the same types of information. The differences between forms parallel the differences between the music theory programs (such as whether they cover various intervals, sharps and flats, several levels of difficulty, etc.)

You can also use the forms when you want to review a particular skill you have mastered. Keeping track of your score each time you run each program can help you to decide what goal to set for the next time.

WRONG NOTE

NAME R. WAGNER NUMBER OF PROBLEMS 20

MASTERY PERCENTAGE 90

# SHARPS	# FLATS	GREATEST INTERVAL	SCORES								MASTERY
0	0	2	100								2/8
0	0	3	85	90							2/9
1	1	3	75	75	90						2/9
1	1	4	70	73	87	85	96				2/10
0	0	5	82	88	93						2/10
1	1	5	85	90							2/10
2	2	5	90								2/11
0	0	6	85	85	90						2/11
1	1	6	70	75	80	90					2/12
2	2	6	65	75	80	100					2/12
3	3	6	60	85	95						2/13
0	0	7	75	85	90						2/13
1	1	7	90								2/14
2	2	7	80	90							2/14
3	3	7	70	95							2/14
4	4	7	100								2/15

APPENDIX A

SETTING UP THE SYSTEM

This appendix includes a list of the equipment you'll need to use the Apple Music Theory programs on your Apple II. You do not need to read all the manuals, but they should be on hand to answer questions that may arise in operating the equipment (e.g., how to boot a diskette).

EQUIPMENT

Equipment description	Part Number	Comments
Apple II or Apple II Plus	A2SØØ32 A2S1Ø32	Minimum 32K of memory and must have autostart ROM
Applesoft card or Language card	A2BØØØ9 A2BØØØ6	Optional for Apple II Plus
TV or video monitor	A2MØØØ5	Black and white
Disk drive and Controller Card with 16-sector PROMs	A2MØØØ4	May be purchased separately (PROMs part #341-ØØ27 and #341-ØØ28)

MANUALS

Manuals	Part Number	Comments
Apple Music Theory: Music Fundamentals from MECC	A2LØØ36	This manual
Apple II BASIC Programming Manual (Integer BASIC)	A2LØØØ5	Setting up the Apple II
Applesoft Tutorial	A2LØØ18	
DOS Manual		How to boot the diskettes

PUTTING THE PIECES TOGETHER

Here are the steps to follow to put your system together:

1) To set up your Apple II, follow the instructions in the Apple II BASIC Programming Manual or the Applesoft Tutorial. You do not need to attach the Game Controllers or a cassette recorder, although there is no harm in doing so. Your Apple II must have 16-sector PROMs on the disk controller card and have at least 32K of memory for you to use the Apple Music Theory programs.

2) To set up the disk drive with its interface card, follow the instructions in the DOS Manual. The DOS manual expects to find the disk drive interface card in slot #6. You'll need to know how to "boot" DOS and how to care for diskettes . See the DOS manual for that information as well. If the interface card does not have 16-sector PROMS (part #341-ØØ27-xx and 341-ØØ28-xx) for PROM 5A and PROM 6A, contact your Apple dealer to obtain those parts. The last two digits of the part number will change from batch to batch.

Your Apple II is now ready to run the Apple Music Theory programs.

APPENDIX B

BACKGROUND ON MUSIC THEORY

For each of the music theory programs, this appendix presents a description that outlines the objectives, prerequisites, and some music theory background for the program. The description tells which Music Menu contains the program and includes photographs of a sample run of the program. The descriptions of the programs are in alphabetical order.

Program name	Music Menu Number
AURAL INTERVALS	I
COUNTING	I
ENHARMONICS	I
FIND THE HALF	II
KEY SIGNATURES	I
MISSING NOTE	II
NAME THE NOTE	I
NOTE TYPES	I
RHYTHM	II
RHYTHM PLAY	II
SCALES	II
TERMS	I
TRIADS	II
VISUAL INTERVALS	I
WHOLE-HALF	II
WRONG NOTE	II

AURAL INTERVALS (MUSIC MENU I)

Objective: After completing this program, the student should be able to identify any interval from a minor 2nd to a major 7th by ear.

Prerequisites: The student should be familiar with the concept of an interval and should be able to identify one or two intervals by ear.

Background Information: Being able to identify intervals by ear is an essential skill for the music theory student. Melodic dictation (writing a melody after hearing it) depends almost totally on the ability to identify intervals. There are 11 intervals to be studied. These are:

Interval	Number of half steps between notes
minor 2nd	1
major 2nd	2
minor 3rd	3
major 3rd	4
perfect 4th	5
augmented 4th/diminished 5th	6
perfect 5th	7
minor 6th	8
major 6th	9
minor 7th	1Ø
major 7th	11

For the beginning student who is learning intervals, the chart below may be useful:

Interval	Played together, the two notes sound
minor 2nd	dissonant
major 2nd	dissonant
minor 3rd	harmonious
major 3rd	harmonious
perfect 4th	neither dissonant nor harmonious
augmented 4th/diminished 5th	dissonant
perfect 5th	neither dissonant nor harmonious
minor 6th	harmonious
major 6th	harmonious
minor 7th	dissonant
major 7th	dissonant

1

```
AURAL INTERVALS

INSTRUCTIONS? (YES OR NO) ■
```

2

```
THIS PROGRAM WILL PROVIDE EAR TRAINING
EXERCISES ON INTERVAL RECOGNITION.
YOU MAY SPECIFY:

  1) THE INTERVALS TO BE DRILLED,

  2) WHETHER THE TONES WILL BE PRESENTED
  GOING FROM LOW TO HIGH OR HIGH TO LOW,

  3) THE NUMBER OF PROBLEMS TO BE
  PRESENTED.

PRESS 'RETURN' TO CONTINUE.■
```

3

```
THE INTERVALS CAN BE PLAYED:

1. GOING FROM THE LOW NOTE TO THE
   HIGH NOTE

2. GOING FROM THE HIGH NOTE TO THE
   LOW NOTE

3. A MIXTURE OF 1 AND 2

WHICH WOULD YOU LIKE - 1, 2, OR 3? 3

HOW MANY PROBLEMS WOULD YOU LIKE?1
```

4

```
WHICH INTERVALS WOULD YOU LIKE?

1.  MIN 2ND
2.  MAJ 2ND
3.  MIN 3RD
4.  MAJ 3TH
5.  PERF 4TH
6.  AUG 4TH/DIM 5TH/TRITONE
7.  PERF 5TH
8.  MIN 6TH
9.  MAJ 6TH
10. MIN 7TH
11. MAJ 7TH
12. OCTAVE
13. ALL INTERVALS

ENTER THE NUMBERS OF THE INTERVALS YOU
WOULD LIKE, ONE PER LINE.  WHEN YOU
HAVE FINISHED, JUST PRESS THE RETURN.
■
```

5

```
BELOW ARE THE INTERVAL ABBREVIATIONS

ABB.  INTERVAL
----  --------
MI2   MINOR 2ND
MA2   MAJOR 2ND
MI3   MINOR 3RD
MA3   MAJOR 3RD
P4    PERFECT 4TH
TRI   TRITONE/AUG. 4TH/DIMIN. 5TH
P5    PERFECT 5TH
MI6   MINOR 6TH
MA6   MAJOR 6TH
MI7   MINOR 7TH
MA7   MAJOR 7TH
OCT   OCTAVE

NO, THE ANSWER WAS P4.

PRESS 'R' TO HEAR THE NOTES AGAIN.
PRESS 'RETURN' TO GO ON.■
```

COUNTING (MUSIC MENU I)

Objectives: After completing this program, the student should be able to:

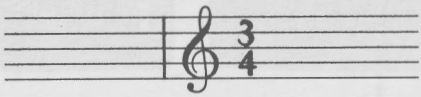
1. Interpret the meaning of time signatures.

2. Determine the number of beats a given note should be held in a specific time signature.

Prerequisites: The student should be able to recognize the various note types and determine their value in a time signature where a quarter note gets one beat (see the program, NOTE TYPES).

Background Information: The number of beats a particular note or rest is held depends on two factors: the note type and the time signature.

The time signature is the pair of numbers placed next to the clef at the beginning of a composition. The top number tells the performer the number of beats in the measure, and the bottom number indicates which type of note receives one beat. In the example below:



the 3 indicates that there are 3 beats in a measure and the 4 tells the musician that a quarter (1/4) note gets one beat. Had the time signature been 3/8, an eighth note would receive one beat.

Some of the time signatures seen in music are:

4	3	2	5	6	7	3	6	3	9	12
4	4	4	4	4	4	2	8	8	8	8

The time signatures, 6/8, 9/8, and 12/8 usually indicate a compound rather than simple meter. In a compound meter, the composer uses the dotted quarter note as the type of note which receives one beat. Conceptually, the time signature, 9/8 could be written as 3/p , where there are three beats per measure and a dotted quarter note receives one beat. Since a dotted quarter note is equivalent to three eighth notes, the compound time signatures, 6/8, 9/8, and 12/8 have 2, 3, and 4 beats per measure respectively.

1

```
COUNTING

INSTRUCTIONS? (YES OR NO) ■
```

2

```
IN THIS DRILL YOU WILL SEE INCOMPLETE
MEASURES OF MUSIC.  EACH MEASURE COULD
BE COMPLETED BY ADDING EXACTLY ONE NOTE.
YOU MUST DECIDE WHICH TYPE OF NOTE
SHOULD BE ADDED.

YOU MAY CHOOSE THE TIME SIGNATURES YOU
WILL BE USING.

PRESS 'RETURN' TO CONTINUE.■
```

3

```
WHICH TIME SIGNATURES WOULD YOU LIKE?

A.  2/4
B.  3/4
C.  4/4
D.  5/4
E.  6/4
F.  3/8
G.  6/8
H.  9/8
I.  12/8
J.  ALL OF THE ABOVE

ENTER THE LETTER OF EACH TIME SIGNATURE
YOU WANT (ONE PER LINE).  WHEN YOU HAVE
FINISHED, JUST PRESS RETURN.

B
■
```

4

```
HOW MANY PROBLEMS WOULD YOU LIKE? ■
```

5

```
WHICH TYPE NOTE WOULD COMPLETE THIS?
(DW,W,DH,H,DQ,Q,DE,E,S) E
```

6

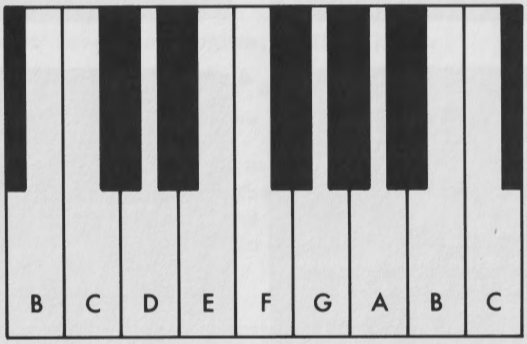
```
WHICH TYPE NOTE WOULD COMPLETE THIS?
(DW,W,DH,H,DQ,Q,DE,E,S) E
PRESS 'RETURN' TO CONTINUE.■
```

ENHARMONICS (MUSIC MENU I)

Objective: After completing this program, the student should be able to identify note names that are enharmonically equivalent.

Prerequisites: The student should know the function of flats, sharps, double flats and double sharps. Ideally, the student should have access to a keyboard instrument or picture of a keyboard.

Background Information:



Consider the picture of a keyboard above. The white keys are labelled C, D, E, F, etc. The black keys are used for sharps and flats, and may have more than one name. If a note is sharped, it is played one half step (one note) higher than it is written. If a note is flatted, it is played one half step lower than written. For example, the black key between F and G can be called F-sharp because it is one half step higher than F; but it can also be called G-flat because it is one half step lower than G.

A double sharp causes a note to be played a whole step (two notes) higher than written. A double flat causes a note to be played a whole step lower than written. Therefore, F-double sharp is G, and G-double flat is F.

Some special cases to note: C-flat is B, and E-sharp is F. These cases do follow the rules, but are a bit tricky.

1

```
ENHARMONICS

DO YOU NEED INSTRUCTIONS? (YES OR NO) ■
```

2

```
THIS PROGRAM PROVIDES DRILL IN
RECOGNIZING NOTES WHICH ARE
ENHARMONICALLY EQUIVALENT, SUCH AS
     A-SHARP AND B-FLAT.

PRESS 'RETURN' TO CONTINUE.■
```

3

```
THERE ARE TWO SETS OF ENHARMONIC
SPELLING DRILLS FROM WHICH YOU MAY
CHOOSE.

SET 1
CONSISTS OF SPELLINGS INVOLVING ONLY
SHARPS AND FLATS.

SET 2
CONSISTS OF SPELLINGS WHICH INVOLVE
DOUBLE SHARPS AND FLATS.

WHICH SET WOULD YOU PREFER - 1 OR 2?■
```

4

```
YOU WILL SEE THE NAME OF A NOTE PRINTED
ON THE SCREEN.  YOU ARE TO TYPE IN THE
SIMPLEST ENHARMONIC SPELLING OF
THAT NOTE.

FOR EXAMPLE, IF THE NOTE GIVEN IS G*
(G FLAT), THE SIMPLEST ENHARMONIC
SPELLING WOULD BE F# (F-SHARP).

PRESS 'RETURN' TO CONTINUE.
```

5

```
WHEN ENTERING ANSWERS:

USE THE '#' (NUMBER SIGN) FOR SHARPS.
USE THE '*' (ASTERISK) FOR FLATS.

      EXAMPLES
B-FLAT          IS B*
G-SHARP         IS G#

PRESS 'RETURN' TO CONTINUE.■
```

6

```
HOW MANY PROBLEMS WOULD YOU LIKE? ■
```

7

```
# <--- SHARP SIGN     FLAT SIGN ---> *

WHAT IS THE SIMPLEST ENHARMONIC
SPELLING OF C#? ■
```

FIND THE HALF (MUSIC MENU II)

Objectives: After completing this program, the student should be able to hear a series of five pitches that ascend by step and identify between which two pitches a half step interval occurred.

Prerequisites: The student should be able to distinguish between a half step and a whole step by ear (see WHOLE-HALF).

Background Information: The ability to identify scales by ear is based on the ability to hear a half step in a series of whole steps.

Here is a sample run for this program:

1

```
FIND THE HALF

INSTRUCTIONS? (YES OR NO) ■
```

2

```
THIS PROGRAM PROVIDES DRILL IN
RECOGNIZING WHOLE AND HALF STEPS.

THE COMPUTER WILL PLAY A SERIES OF
NOTES WHICH ARE PART OF A SCALE.
IN EVERY CASE BUT ONE, THE INTERVAL
BETWEEN THE NOTES WILL BE A WHOLE STEP.
YOU MUST DETERMINE BETWEEN WHICH TWO
NOTES YOU HEAR AN INTERVAL OF A HALF
STEP.

PRESS 'RETURN' TO CONTINUE.
```

3

```
YOU CHOOSE THE NUMBER OF NOTES (3-5)
WHICH WILL BE IN EACH SERIES - THE MORE
NOTES, THE MORE DIFFICULT THE EXERCISES
WILL BE.

HOW MANY NOTES IN THE SERIES? (3-5) 5■
```

4

```
HOW MANY PROBLEMS WOULD YOU LIKE? ■
```

5

```
WHEN YOU HEAR THE NOTES, LISTEN FOR
THE HALF-STEP AND DECIDE BETWEEN WHICH
TWO NOTES IT OCCURS.

PRESS 'RETURN' TO CONTINUE.■
```

6

```
TYPE THE NUMBER OF THE NOTE WHICH IS
PLAYED JUST BEFORE THE HALF STEP.
FOR EXAMPLE, IF YOU HEAR A HALF STEP
BETWEEN NOTES 2 AND 3, ANSWER BY TYPING
THE NUMBER, 2.

PRESS 'R' TO HEAR THE NOTES AGAIN.
-------------------------------------
THE HALF-STEP OCCURS AFTER WHICH NOTE? 1
■

IF YOU WANT TO HEAR THE NOTES AGAIN,
PRESS 'R', OTHERWISE, PRESS 'RETURN'.■
```

KEY SIGNATURES (MUSIC MENU I)

Objective: After running this program, the student should be able to identify all major and minor key signatures.

Prerequisites: The student should know the note names (see NAME THE NOTE) and be somewhat familiar with a procedure for identifying key signatures.

Background Information: The key signature (sharps or flats next to the clef) identifies the key in which the music is written--e.g., A-major, B minor, etc.

MAJOR KEYS

There are several methods for identifing major key signatures. One of the more popular consists of two rules: If there are sharps in the key signature, Do (the key) is one half step up from the last (rightmost) sharp. If there are flats in the key signature, Do is the next to last flat.

The key can also be determined by counting the number of sharps or flats in the key signature. The following table shows the keys as determined by the number of sharps or flats:

Number	Names	Major Key	Minor Key
7 sharps	F#, C#, G#, D#, A#, E#, B#	C#	A#
6 sharps	F#, C#, G#, D#, A#, E#	F#	D#
5 sharps	F#, C#, G#, D#, A#	B	G#
4 sharps	F#, C#, G#, D#	E	C#
3 sharps	F#, C#, G#	A	F#
2 sharps	F#, C#	D	B
1 sharp	F#	G	E
none			
1 flat	B*	F	D
2 flats	B*, E*	B*	G
3 flats	B*, E*, A*	E*	C
4 flats	B*, E*, A*, D*	A*	F
5 flats	B*, E*, A*, D*, G*	D*	B*
6 flats	B*, E*, A*, D*, G*, C*	G*	E*
7 flats	B*, E*, A*, D*, G*, C*, F*	C*	A*

Some things to note in this chart are:

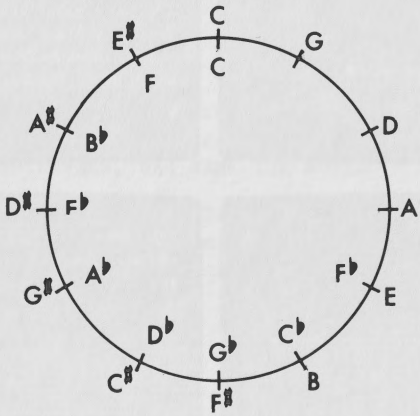
1. The first sharp is always F, the second C, etc.

2. The first flat is always B, the second E, etc.

3. The notes are flatted in the reverse order from the way they are sharped, i.e., the sharps in order are: FCGDAEB. The flats are BEADGCF.

4. The notes are sharped and flatted in a predictable order. Each sharp is a fifth up from the previous sharp and each flat is a fifth down from the previous flat.

A concept called the circle of fifths is useful in studying the order of sharps, flats, and key signatures. Below is a circle of fifths.



Notice the order of the pitches. They are arranged so that the order of the interval between adjacent pitches is a fifth. C is at the top. G, the note to the right of C, is a fifth higher than C; and F, the note to the left of C, is a fifth lower than C. The circle of fifths can be used to identify a key signature, or to determine the order of sharps and flats in a key signature. Starting at C and going clockwise are all the key signatures which have sharps. For example, G has 1 sharp, D has 2, etc. Starting at C and going counterclockwise are all the key signatures that have flats. F has 1 flat, B* has 2, etc.

The order of the sharps can be found by starting at F# and moving clockwise. The order of flats can be found by starting at B* and moving counterclockwise.

MINOR KEYS

There are several ways to identify minor key signatures. Perhaps the easiest is to first identify the major key and then move down a minor 3rd (see Intervals). Using this method, if there is one sharp in the key signature, the major key is G. The pitch found a minor 3rd below G is E. Therefore, a key signature that has one sharp is E minor. The relative minor of G major is E minor.

Here is a sample run for this program:

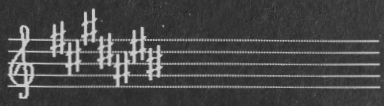
```
KEY SIGNATURES

INSTRUCTIONS? (YES OR NO) ■
```

```
THIS PROGRAM IS A DRILL IN IDENTIFYING
KEY SIGNATURES.

YOU MAY WORK WITH:

  1) ONLY MAJOR KEYS,
  2) ONLY MINOR KEYS, OR
  3) BOTH MAJOR AND MINOR KEYS.
WHICH WOULD YOU LIKE? (ENTER 1, 2, OR 3)

■
```

```
HOW MANY PROBLEMS WOULD YOU LIKE? ■
```

```
THE COMPUTER WILL DRAW A KEY SIGNATURE.
YOU WILL HAVE TO TYPE THE NAME OF THE
KEY.

PRESS 'RETURN' TO CONTINUE.■
```

```
WHEN ANSWERING:
USE THE '#' (NUMBER SIGN) TO INDICATE
SHARPS.
USE THE '*' (ASTERISK) TO INDICATE
FLATS.

DO NOT INCLUDE THE WORDS MINOR OR MAJOR.

HERE ARE SOME EXAMPLES
----------------------

A-FLAT  IS A*
G       IS G
F-SHARP IS F#

PRESS 'RETURN' TO CONTINUE.■
```



```
THIS IS THE KEY SIGNATURE FOR WHICH
MINOR KEY? ■

# <--- SHARP SIGN     FLAT SIGN ---> *
```

MISSING NOTE (MUSIC MENU II)

Objectives: After completing this program, the student should be able to look at a pattern of 4 notes and a blank space (representing a missing note) and determine the pitch of the missing note after hearing the five notes played.

Prerequisites: The student should know note names (see NAME THE NOTE) and know at least some intervals by ear and sight (see AURAL INTERVALS and VISUAL INTERVALS).

Background Information: This program does not introduce new concepts, but rather reinforces those learned in programs such as VISUAL INTERVALS, AURAL INTERVALS, and NAME THE NOTE.

Skills learned through MISSING NOTE provide a good background for starting work on musical dictation.

Here is a sample run for this program:

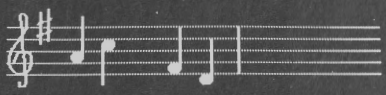
```
MISSING NOTE

INSTRUCTIONS - YES OR NO?
```

```
IN THIS DRILL, YOU WILL SEE A FIVE-NOTE
PHRASE OF MUSIC PRINTED ON THE SCREEN.
FOUR OF THE NOTES WILL BE WRITTEN AS
NORMAL NOTES - THE OTHER WILL BE
INDICATED BY A SPACE.  STUDY THE PHRASE.

WHEN YOU ARE READY, PRESS THE RETURN
KEY TO HEAR THE MELODY PLAYED.  BASED
ON HEARING THE MELODY, YOU WILL TRY TO
IDENTIFY THE MISSING NOTE.

PRESS 'RETURN' TO CONTINUE.
```

```
YOU MAY SELECT THE MAXIMUM NUMBER OF
FLATS OR SHARPS IN THE KEY SIGNATURE,
THE MAXIMUM SIZE OF THE INTERVALS, AND
AND THE NUMBER OF PROBLEMS.

PRESS 'RETURN' TO CONTINUE.
```

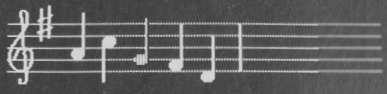
```
WHAT IS THE GREATEST NUMBER OF FLATS
YOU WANT IN THE KEY SIGNATURE? (0-7) 1

WHAT IS THE GREATEST NUMBER OF SHARPS
YOU WANT IN THE KEY SIGNATURE? (0-7) 1

WHAT IS THE LARGEST INTERVAL YOU WANT
IN THE PHRASE? (A 2ND IS INDICATED BY
THE NUMBER, 2, A 3RD BY 3, ETC.) 4

HOW MANY PROBLEMS WOULD YOU LIKE?
```

```
IN THE EXERCISES THAT FOLLOW, YOU ARE
TO IDENTIFY THE MISSING NOTE.
ALL NOTES WILL BE WITHIN THE SCALE (NO
ACCIDENTALS) AND THEREFORE, YOU NEED
ENTER ONLY THE NOTE NAME.
NO SHARP OR FLAT SIGNS ARE REQUIRED.
FOR EXAMPLE, IF THE MISSING NOTE IS
E-FLAT, YOU SIMPLY ENTER E.

PRESS 'RETURN' TO CONTINUE.
```



```
PRESS RETURN TO HEAR THE MELODY.
```

```
WHAT IS THE NAME OF THE MISSING NOTE?

PRESS 'R' TO HEAR THE MELODY AGAIN.
```



```
WHAT IS THE NAME OF THE MISSING NOTE? G
CORRECT
PRESS 'R' TO HEAR THE MELODY AGAIN.
PRESS 'RETURN' TO CONTINUE.
```

NAME THE NOTE (MUSIC MENU I)

Objective: After completing this program, the student should be able to:

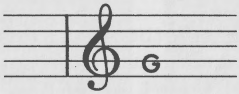
1. Give the names of notes in both treble and bass clefs.

2. Give the names of notes that are written with ledger lines.

3. Give the names of notes when the key signature contains sharps or flats.

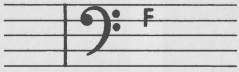
Prerequisites: The student should know the scheme for naming notes and the functions of ledger lines and key signatures.

Background Information: The two most commonly used clefs are the treble and bass clefs. The alternate names for these are G-clef and F-clef repectively. A treble clef is shown below:

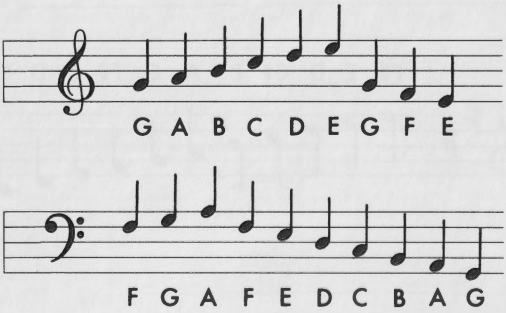


Notice that the clef seems to focus on the second line of the staff. The treble or G-clef identifies this line as G.

In the drawing of the bass clef below, notice that the focus of the clef symbol is on the fourth line. The bass or F-clef identifies this line as F.

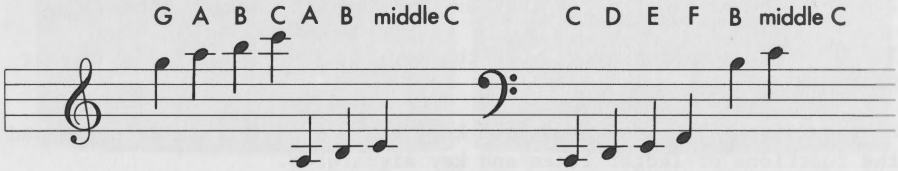


The other notes on the staffs can be determined from these starting points as shown below:



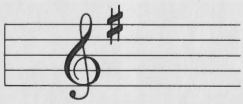
LEDGER LINES

Since all notes cannot be displayed on these staffs, composers use ledger lines to show those notes that go above or below a staff. A ledger line should be regarded as a continuation of the staff. Consider the examples below:

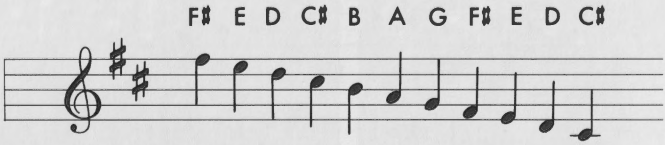


KEY SIGNATURES

A key signature is a shorthand method for identifying notes to be sharped or flatted throughout the composition. In the key of G major, for example, the note, F, is almost alway played as F-sharp. Rather than placing a sharp sign before each F in the piece, the composer uses a key signature like that below:



Since the sharp sign is placed on the fifth line (F), the perfomer knows that all Fs are to be played as F-sharps. In the example below, notice that there are two sharps: F and C. This means that all F's and C's in the piece are now played as F#'s and C#'s.



Here is a sample run for this program:

```
                NAME THE NOTE

THIS IS A DRILL ON NAMING NOTES.
YOU WILL SEE A NOTE PRINTED, AND YOU
HAVE TO GIVE THE CORRECT NAME FOR THAT
NOTE.

        PRESS 'RETURN' TO CONTINUE.
```

```
THERE ARE FIVE LEVELS OF PROBLEM
DIFFICULTY AVAILABLE - THESE ARE:

LEVEL 1 - ALL TREBLE CLEF, NO SHARPS,
          FLATS, OR LEDGER LINES

LEVEL 2 - ALL BASS CLEF, NO SHARPS,
          FLATS, OR LEDGER LINES

LEVEL 3 - MIXTURE OF TREBLE AND BASS
          CLEFS, NO SHARPS, FLATS OR
          LEDGER LINES

LEVEL 4 - MIXTURE OF TREBLE AND BASS
          CLEFS, SOME LEDGER LINES, NO
          SHARPS OR FLATS

LEVEL 5 - MIXTURE OF TREBLE AND BASS
          CLEFS, SOME LEDGER LINES AND
          SOME SHARPS AND FLATS

WHICH LEVEL DO YOU WANT?■
```

```
HOW MANY PROBLEMS WOULD YOU LIKE? ■
```

```
WHEN ANSWERING, REMEMBER THAT:

THE '#' IS THE SHARP SIGN.
THE '*' (ASTERISK) IS THE FLAT SIGN.

HERE ARE SOME EXAMPLES OF ANSWERS:
ANSWER       YOU TYPE
------       ---------
  A              A
A-SHARP          A#
A-FLAT           A*

      PRESS 'RETURN' TO CONTINUE.■
```

```
WHAT IS THE NAME OF THE NOTE?

* <--- FLAT SIGN -  SHARP  SIGN ---> #
```

```
WHAT IS THE NAME OF THE NOTE? F
CORRECT

      PRESS 'RETURN' TO CONTINUE.
```

NOTE TYPES (MUSIC MENU I)

Objectives: After completing this program, the student should be able to:

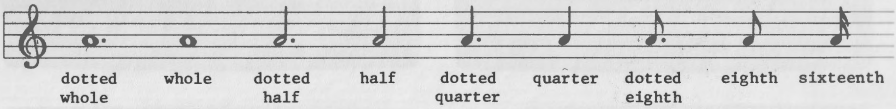
1. Identify dotted whole, whole, dotted half, half, dotted quarter, quarter, dotted eighth, eighth, and sixteenth notes and rests.

2. Specify how long a given note or rest should be held if a quarter note receives one beat.

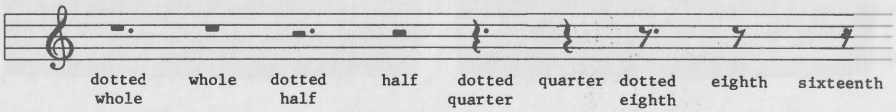
Prerequisites: The student should know something about note and rest types and should know how to determine the number of beats a note or rest is to be held.

Background Information: This program provides drill on recognizing the note and rest types shown below:

NOTES



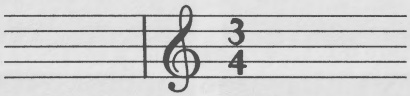
RESTS



The number of beats a rest or note is held depends on both the time signature, and the type of note or rest.

TIME SIGNATURE

The time signature is the pair of numbers found to the right of the clef at the beginning of the composition. The top number is the number of beats in a measure and the bottom number indicates which type of note receives one beat. In the example below, there are 3 beats in a measure and a quarter (1/4) note receives one beat.



NOTE TYPE

Our system for naming notes helps the musician determine how long one note should be held relative to another. The half note is held half as long as the whole note, and similarly, the quarter note is held only half as long as the half note and one-fourth as long as a whole note. Looking at things from the other direction, if a quarter note is held one beat, then a half note is held twice as long, or two beats.

If a note is followed by a dot (.), the length of time the note is held is increased by 50 percent. For example, if a half note is held two beats, a dotted half note is held (2 x 1.5) or 3 beats.

Here is a sample run for this program:

1

```
NOTE TYPES

INSTRUCTIONS? (YES OR NO) ■
```

2

```
THIS PROGRAM PROVIDES DRILL ON
RECOGNIZING DIFFERENT NOTES AND RESTS.

THE PROGRAM WILL PRINT A NOTE OR REST
AND YOU WILL BE ASKED TO IDENTIFY
THE TYPE OF NOTE OR REST - E.G. WHOLE,
HALF, DOTTED QUARTER, ETC.

PRESS 'RETURN' TO CONTINUE ■
```

3

```
YOU WILL ALSO BE ASKED HOW MANY BEATS
THAT NOTE OR REST SHOULD BE HELD IF A
QUARTER NOTE IS HELD ONE BEAT.

PRESS 'RETURN' TO CONTINUE.
```

4

```
YOU MAY BE DRILLED ON ANY OF THE
FOLLOWING:

1.) NOTES ONLY
2.) RESTS ONLY
3.) A MIXTURE OF NOTES AND RESTS

WHICH WOULD YOU LIKE? (ENTER A NUMBER
1 - 3) 3
```

5

```
WHEN IDENTIFYING NOTES, USE THE
ABBREVIATIONS GIVEN BELOW:

ABBREVIATION  NOTE OR REST TYPE
------------  ------------------
       W       WHOLE
       H       HALF
       Q       QUARTER
       E       EIGHTH
       S       SIXTEENTH
      DW       DOTTED WHOLE
      DH       DOTTED HALF
      DQ       DOTTED QUARTER
      DE       DOTTED EIGHTH

THE ABBREVIATIONS ARE DISPLAYED ON THE
SCREEN WHILE YOU ANSWER THE QUESTIONS.

PRESS 'RETURN' TO CONTINUE.
```

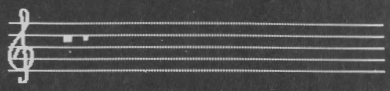
6

```
AFTER IDENTIFYING THE NOTE TYPE
YOU WILL BE ASKED HOW MANY BEATS THAT
NOTE OR REST SHOULD BE HELD IN A TIME
SIGNATURE IN WHICH A QUARTER NOTE
IS HELD FOR ONE COUNT.

PRESS 'RETURN' TO CONTINUE.
```

7

```
IF A NOTE IS HELD ONLY PART OF A BEAT
ENTER THE NUMBER OF BEATS AS A DECIMAL
E.G. AN EIGHTH NOTE WOULD RECEIVE .5
BEATS.

HOW MANY PROBLEMS DO YOU WANT? 1
```

8



```
ENTER THE ABBREVIATION FOR THIS REST.
(DW,W,DH,H,DQ,Q,DE,E,S)
```

9

```
ENTER THE ABBREVIATION FOR THIS REST.
(DW,W,DH,H,DQ,Q,DE,E,S) DW
PRESS 'RETURN' TO CONTINUE.
```

10

```
HOW MANY BEATS DOES THIS REST RECEIVE?
(6, 4, 3, 2, 1.5, 1, .75, .5, .25) 6
PRESS 'RETURN' TO CONTINUE.
```

RHYTHM (MUSIC MENU II)

Objectives: After completing this program, the student should be able to:

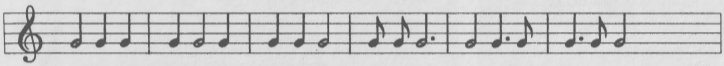
1. Know how a given rhythm pattern should be played.

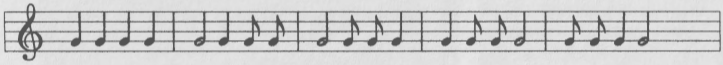
2. Identify basic rhythm patterns by ear.

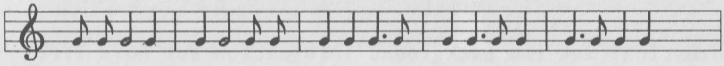
Prerequisites: The student should be familiar with the various note types and their interpretations (see NOTE TYPES and COUNTING).

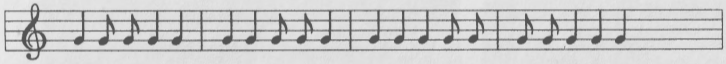
Background Information: See the background information for NOTE TYPES and COUNTING. The following page shows the patterns used in this program.

Level 1 Patterns

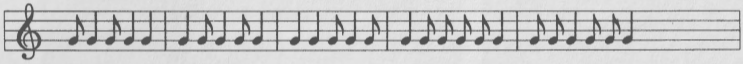


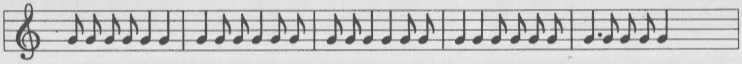


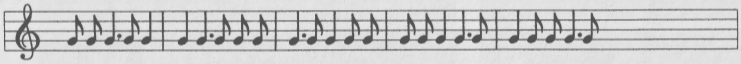


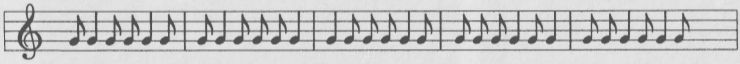


Level 2 Patterns

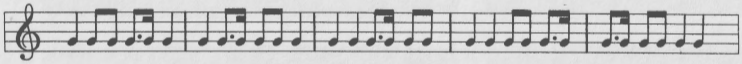


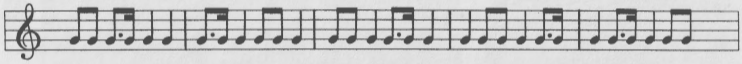


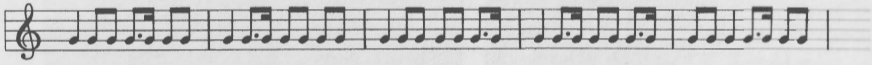


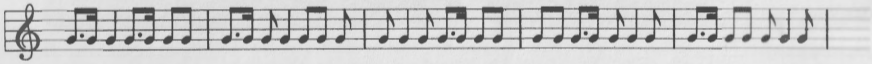


Level 3 Patterns









Here is a sample run for this program:

1

```
RHYTHM

INSTRUCTIONS? (YES OR NO) ■
```

2

```
IN THIS PROGRAM, YOU WILL BE DRILLED ON
RECOGNIZING RHYTHM PATTERNS. YOU WILL
SEE A RHYTHM PATTERN AND THEN YOU WILL
HEAR THREE RHYTHM PATTERNS.  YOU MUST
DECIDE WHICH OF THE THREE CHOICES
MATCHES THE PATTERN YOU SEE.

PRESS 'RETURN' TO CONTINUE.
```

3

```
YOU MAY SELECT FROM ONE OF THREE
DIFFICULTY LEVELS:

1.  THE EXERCISES HAVE 3 TO 5 NOTES AND
    CONSIST OF HALF, QUARTER, DOTTED
    QUARTER, AND EIGHTH NOTES.

2.  THE EXERCISES HAVE 5 OR 6 NOTES, AND
    USE QUARTER AND EIGHTH NOTES.
    THERE IS SOME SYNCOPATION.

3.  THE EXERCISES HAVE 6 OR 7 NOTES AND
    USE QUARTER, EIGHTH, DOTTED EIGHTH
    AND SIXTEENTH NOTES.  THERE IS SOME
    SYNCOPATION.

WHAT LEVEL OF PROBLEMS DO YOU WANT?
ENTER 1, 2, OR 3. ■
```

4

```
IN EACH EXERCISE YOU WILL SEE TWO
MEASURES OF MUSIC PRINTED.  THE FIRST
WILL ALWAYS BE A MEASURE OF 4 QUARTER
NOTES.  THIS MEASURE ESTABLISHES THE
TEMPO.  THE SECOND MEASURE IS THE ONE
WHICH YOU WILL STUDY.  WHEN YOU ARE
FAMILIAR WITH THE MEASURE, YOU ARE
READY TO HEAR THE POSSIBLE MATCHES.

PRESS 'RETURN' TO CONTINUE.
```

5

```
YOU WILL BE ASKED WHICH PATTERN YOU
WOULD LIKE TO HEAR.  RESPOND WITH A
1, 2, OR 3.  YOU MAY HEAR EACH
PATTERN AS MANY TIMES AS YOU WISH.

WHEN YOU DECIDE WHICH PATTERN MATCHES
THE PATTERN ON THE SCREEN, TYPE THE
LETTER, 'A'.  YOU WILL THEN BE ASKED
FOR YOUR ANSWER.

PRESS 'RETURN' TO CONTINUE.■
```

6

```
HOW MANY PROBLEMS WOULD YOU LIKE? ■
```

7

```
WHICH PATTERN IS CORRECT? (1-3) 2
CORRECT
PRESS 'R' TO HEAR THE CORRECT PATTERN,
PRESS 'RETURN' TO CONTINUE.
```

RHYTHM PLAY (MUSIC MENU II)

Objective: After completing the program, the student should be able to tap out a variety of rhythm patterns accurately in 4/4 time.

Prerequisites: The student should be familiar with the various note types and their interpretation as well as being able to identify some simple rhythm patterns by ear (see NOTE TYPES, COUNTING, and RHYTHM).

Background Information: See the background information for NOTE TYPES and COUNTING.

Here is a sample run for this program:

1

```
RHYTHM PLAY

INSTRUCTIONS? (YES OR NO) ■
```

2

```
IN THIS PROGRAM, YOU WILL BE DRILLED ON
PERFORMING RHYTHM PATTERNS.  YOU
WILL SEE A PATTERN AND THEN WILL BE
ASKED TO 'PLAY' IT ON THE KEYBOARD.

THE COMPUTER WILL DECIDE WHETHER OR
NOT THE PATTERN WAS 'PLAYED' CORRECTLY.

PRESS 'RETURN' TO CONTINUE.
```

3

```
YOU MAY SELECT FROM ONE OF THREE
DIFFICULTY LEVELS:

1.  THE EXERCISES HAVE 3 TO 5 NOTES AND
    CONSIST OF HALF, QUARTER, DOTTED
    QUARTER, AND EIGHTH NOTES.

2.  THE EXERCISES HAVE 5 OR 6 NOTES, AND
    USE QUARTER AND EIGHTH NOTES.
    THERE IS SOME SYNCOPATION.

3.  THE EXERCISES HAVE 6 OR 7 NOTES AND
    USE QUARTER, EIGHTH, DOTTED EIGHTH
    AND SIXTEENTH NOTES.  THERE IS SOME
    SYNCOPATION.

WHICH DIFFICULTY LEVEL DO YOU WANT?
ENTER 1, 2, OR 3. ■
```

4

```
HOW MANY PROBLEMS WOULD YOU LIKE? ■
```

5

```
IN EACH EXERCISE YOU WILL SEE TWO
MEASURES OF MUSIC PRINTED.  THE FIRST
WILL ALWAYS BE A MEASURE OF 4 QUARTER
NOTES.  THIS MEASURE WILL ESTABLISH THE
TEMPO.  THE SECOND MEASURE IS THE ONE
WHICH WILL ACTUALLY BE JUDGED.  WHEN
YOU ARE FAMILIAR WITH THE PATTERN,
YOU WILL TRY TO PERFORM IT.

PRESS 'RETURN' TO CONTINUE.
```

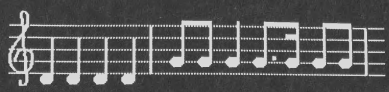
6

```
TO PERFORM THE RHYTHM, SIMPLY TAP IT
OUT USING THE 'N' KEY.
WHEN YOU HAVE FINISHED, THE COMPUTER
WILL SHOW YOU WHAT YOU PLAYED.

PRESS 'RETURN' TO CONTINUE.■
```

7

```
PLAY THE PATTERN USING THE 'N' KEY.
```

8



```
PLAY THE PATTERN USING THE 'N' KEY.
CORRECT
PRESS 'R' TO HEAR THE PATTERN PLAYED
CORRECTLY; PRESS 'RETURN' TO GO ON.
```

SCALES (MUSIC MENU II)

Objective: After completing this program, the student should be able to recognize the following by ear:

1. Major scale
2. Harmonic minor scale
3. Natural minor scale
4. Melodic minor scale
5. Dorian mode
6. Phrygian mode
7. Lydian mode
8. Mixolydian mode

Prerequisites: The student should know the definition of the scales or modes to be studied and should have skill in differentiating between whole- and half-step intervals (see WHOLE-HALF and FIND THE HALF).

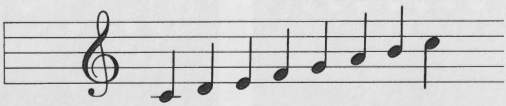
Background Information: Four different types of scales and four modes are commonly used in music. This document contains the following information about each scale or mode:

1. Definition
2. Example, and
3. Things to listen for in identifying the scale or mode.

MAJOR SCALE

Ascending pattern: w w h w w w h (w = whole, h = half)
Descending pattern: h w w w h w w

Example:



Things to listen for:

1. The interval between the 2nd and 3rd degrees is a whole step.

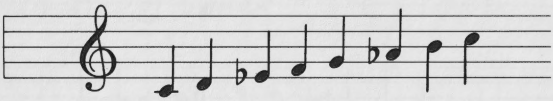
2. The interval between the 7th and 8th degrees is a half step.

3. Is most easily confused with mixolydian mode.

HARMONIC MINOR SCALE

Ascending pattern: w h w w h augmented-2nd h
Descending pattern: h augmented-2nd h w w h w

Example:



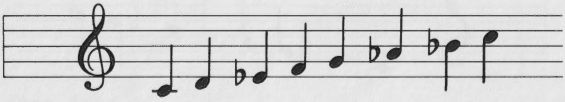
Things to listen for:

This scale is easily recognized by the augmented 2nd between the 6th and 7th degrees of the scale. The harmonic minor scale is the only scale which has such an interval. The augmented 2nd sounds like a minor 3rd and gives the scale what could be described as an "oriental" sound.

NATURAL OR PURE MINOR

Ascending pattern: w h w w h w w
Descending pattern: w w h w w h w

Example:



Things to listen for:

1. The step between the 2nd and 3rd degrees is a half step.

2. The step between the 7th and 8th degrees is a whole step.

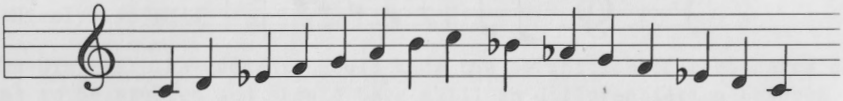
3. The step between the 6th and 7th degrees is a whole step.

4. It is most easily confused with dorian mode.

MELODIC MINOR SCALE

Ascending pattern: w h w w w w h
Descending pattern: w w h w w h w

Example:



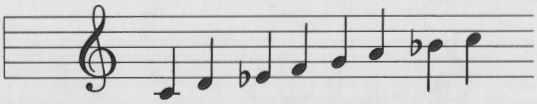
Things to listen for:

The ascending and descending scales do not use the same notes. The melodic minor scale is the only scale which does not use the same note for both ascending and descending.

DORIAN MODE

Ascending pattern: w h w w w h w
Descending pattern: w h w w w h w

Example:



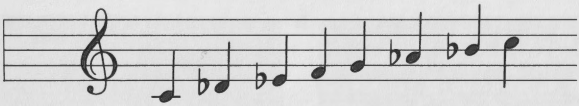
Things to listen for:

This sound much like a pure minor scale. The distinguishing feature is the half step between the 6th and 7th degrees.

PHRYGIAN MODE

Ascending pattern: h w w w h w w
Descending pattern: w w h w w w h

Example:



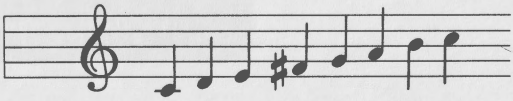
Things to listen for:

The phrygian mode is the only mode or scale that has a half step between its first and second degrees.

LYDIAN MODE

Ascending pattern: w w w h w w h
Descending pattern: h w w h w w w

Example:



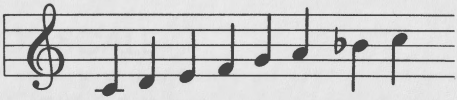
Things to listen for:

The lydian mode is the only scale that begins with 3 whole steps.

MIXOLYDIAN MODE

Ascending pattern: w w h w w h w
Descending pattern: w h w w h w w

Example:



Things to listen for:

The mixolydian mode sounds very much like a major scale as the first six degrees are the same. The interval between the 7th and 8th degrees, however, is a whole rather than a half step.

Here is a sample run for this program.

1

```
                SCALES

SCALES PROVIDES PRACTICE IN IDENTIFYING
MAJOR SCALES, THREE TYPES OF MINOR
SCALES, AND (OPTIONALLY) FOUR MODES.


PRESS 'RETURN' TO CONTINUE.
```

2

```
DO YOU WANT TO WORK WITH:
   1) MAJOR AND MINOR SCALES ONLY,
   2) MAJOR AND MINOR SCALES AND
      THE FOUR MODES.
ENTER 1 OR 2.
```

3

```
HOW MANY PROBLEMS WOULD YOU LIKE?
```

4

```
YOU WILL HEAR A SCALE OR MODE AND BE
ASKED TO IDENTIFY ITS TYPE.  USE THE
NUMBERS BELOW TO ENTER YOUR ANSWERS.

1. MAJOR            5. DORIAN MODE
2. HARMONIC MINOR   6. PHRYGIAN MODE
3. NATURAL MINOR    7. LYDIAN MODE
4. MELODIC MINOR    8. MIXOLYDIAN MODE

PRESS 'RETURN' TO BEGIN.
```

5

```
YOU WILL HEAR A SCALE OR MODE AND BE
ASKED TO IDENTIFY ITS TYPE.  USE THE
NUMBERS BELOW TO ENTER YOUR ANSWERS.

1. MAJOR            5. DORIAN MODE
2. HARMONIC MINOR   6. PHRYGIAN MODE
3. NATURAL MINOR    7. LYDIAN MODE
4. MELODIC MINOR    8. MIXOLYDIAN MODE

WHICH SCALE OR MODE DID YOU HEAR?
ENTER THE CORRECT NUMBER (1-8). 2
NO, THE CORRECT NUMBER WAS 6.

PRESS 'R' TO HEAR THE SCALE AGAIN.
PRESS 'RETURN' TO CONTINUE.
```

SEVENTHS (MUSIC MENU II)

Objective: After completing this program, the student should be able to recognize arpeggiated major, minor, dominant, half-diminished, and fully-diminished 7th chords by ear.

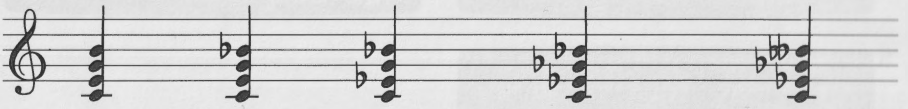
Prerequisites: The student should be able to identify major, minor, augmented, and diminished triads by ear (see TRIADS).

Background Information: Seventh chords consist of a triad plus the note that is a 7th above the root of the triad.

The type of the 7th chord is determined by the type of triad and the type of 7th. Study the chart below:

Type of Triad	Type of 7th	Type of 7th Chord
major	major	major (or major-major)
major	minor	dominant (or major-minor)
minor	minor	minor (or minor-minor)
diminished	minor	half-diminished
diminished	diminished	fully diminished

Examples:

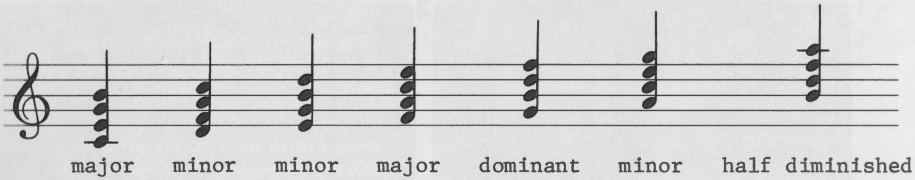


major dominant minor half diminished fully diminished

The seventh chords that can be constructed on the various degrees of the scale are as follows:

Degree of Scale	Seventh Chord
1	major
2	minor
3	minor
4	major
5	dominant
6	minor
7	half-diminished

Examples:



In sheet music, symbols are used for 7th chords. A plain 7th chord, such as G7, indicates a dominant 7th chord. Major and minor 7ths are marked maj7 and min7 respectively.

Here is a sample run for this program.

1

```
SEVENTHS

INSTRUCTIONS? (YES OR NO) ■
```

2

```
THIS PROGRAM PROVIDES EAR TRAINING IN
RECOGNIZING VARIOUS TYPES OF SEVENTH
CHORDS.

IN EACH EXERCISE, YOU WILL HEAR A
CHORD PLAYED AS A SERIES OF SEVEN
NOTES - ROOT, THIRD, FIFTH, SEVENTH,
FIFTH, THIRD, AND ROOT.  YOU WILL TRY
IDENTIFY THE CHORD.

PRESS 'RETURN' TO CONTINUE.
```

3

```
THE EXERCISES COVER MAJOR, MINOR,
DOMINANT, HALF DIMINISHED AND FULLY .
DIMINISHED 7TH CHORDS.  YOU MAY DECIDE
WHETHER OR NOT TO INCLUDE THE HALF AND
FULLY DIMINISHED CHORDS.

IN ADDITION, YOU MAY CHOOSE TO USE THE
SAME ROOT NOTE FOR ALL EXERCISES,
OR TO USE DIFFERENT ROOT NOTES.

PRESS 'RETURN' TO CONTINUE.
```

4

```
HOW MANY EXERCISES WOULD YOU LIKE?1

WOULD YOU LIKE:
  1) ONLY MAJOR, MINOR, AND DOMINANT
     7THS,
  2) MAJOR, MINOR, DOMINANT,
     HALF-DIMINISHED, AND FULL-
     DIMINISHED 7THS?
(ENTER 1 OR 2)?
```

5

```
DO YOU WANT THE ROOT USED FOR ALL
CHORDS TO BE FIXED OR WOULD YOU LIKE
A DIFFERENT ROOT FOR EACH CHORD?
(ENTER 'F' FOR FIXED, 'D' FOR DIFFERENT)
```

6

```
WHEN IDENTIFYING THE SEVENTH CHORDS,
USE THE NUMBERS BELOW:

NUMBER  7TH CHORD
------  ---------
  1     MAJOR 7TH
  2     MINOR 7TH
  3     DOMINANT 7TH
  4     HALF-DIMINISHED 7TH
  5     FULL-DIMINISHED 7TH

FOR EXAMPLE, IF YOU HEAR A MINOR
SEVENTH CHORD, ENTER THE NUMBER 2.

THE SEVENTHS WILL BEGIN AS SOON AS YOU
PRESS THE RETURN KEY.■
```

7

```
WHEN IDENTIFYING THE SEVENTH CHORDS,
USE THE NUMBERS BELOW:

NUMBER  7TH CHORD
------  ---------
  1     MAJOR 7TH
  2     MINOR 7TH
  3     DOMINANT 7TH
  4     HALF-DIMINISHED 7TH
  5     FULL-DIMINISHED 7TH

FOR EXAMPLE, IF YOU HEAR A MINOR
SEVENTH CHORD, ENTER THE NUMBER 2.

PRESS 'R' TO HEAR THE CHORD AGAIN.  IF
YOU CAN IDENTIFY THE CHORD, ENTER ITS
NUMBER. (1-5) 3
CORRECT
TO HEAR THE CHORD AGAIN, PRESS R.  TO
CONTINUE, PRESS 'RETURN'.
```

TERMS (MUSIC MENU I)

Objectives: Upon completion of this program, the student should know the meanings of 57 commonly used musical terms.

Prerequisites: None.

Background Information: The terms used in this program and their meanings are listed below:

Term	Meaning
a cappella	singing without accompaniment
a tempo	resume the normal tempo
adagio	slowly and leisurely
agitato	fast and with excitement
al fine	to the end
al segno	to the sign
allegro	quick, but not so fast as presto
andante	at walking speed
arpeggio	playing the notes of a chord quickly, one after the other
brio	bright
calore	warm
canon	a round
cantabile	in singing style
capo	head or beginning
comodo	comfortable
coda	a final passage closing a composition
con	with
crescendo	become gradually louder
de capo al fine	return to the beginning and conclude with the word fine
diminuendo	becoming gradually softer
dolce	sweetly
dolore	sad
fine	the end
forte	loud
fuoco	fire
grazioso	smooth, elegant
grave	with gravity
largo	slow and stately
legato	smooth
lento	slowly
ma non troppo	but not too much
maestoso	majestically
marcato	strongly accented
meno	less
mezzo	medium or fairly
molto	very much
moto	motion
pesante	heavily
piano	soft
piu	more

pizzicato	plucked
poco	a little
poco a poco	little by little
presto	very fast
rallentando	slowly, gradually
ritard	become gradually slower
rubato	intentionally deviating from strict rhythm
segue	continue
sempre	always
sforzando	with emphasis
sostenuto	held for the full indicated time value
staccato	with distinct breaks between successive notes
stringendo	accelerating the tempo toward a climax
subito	suddenly
tenuto	hold for full value
tutti	for all instruments or voices
vivace	lively, spirited

Here is a sample run for this program.

1

```
                    TERMS

THIS IS A DRILL IN MUSICAL TERMINOLOGY.

THERE ARE THREE SETS OF TERMS AVAILABLE
FOR DRILL WORK.  THEY ARE AS FOLLOWS:

     1) MOST COMMONLY USED TERMS,
     2) COMMONLY USED TERMS,
     3) LESS COMMONLY USED TERMS.

WHICH SET WOULD YOU LIKE - 1, 2, OR 3?
```

2

```
HOW MANY PROBLEMS WOULD YOU LIKE?
```

3

```
YOU WILL SEE A TERM PRINTED AT THE TOP
OF THE SCREEN.  BELOW THE TERM ARE
THREE POSSIBLE DEFINITIONS.  YOU ARE TO
SELECT THE DEFINITION WHICH MOST
CLOSELY FITS THE TERM AT THE TOP OF THE
SCREEN.  THE DEFINITIONS ARE LABELLED
A, B, AND C.  TYPE THE LETTER WHICH
CORRESPONDS TO THE BEST DEFINITION.

        PRESS 'RETURN' TO CONTINUE.
```

4

```
                    SUBITO
                    ------

A. CONTINUE

B. SUDDENLY

C. LITTLE BY LITTLE

WHAT IS THE CORRECT ANSWER - A, B, OR C?
```

TRIADS (MUSIC MENU II)

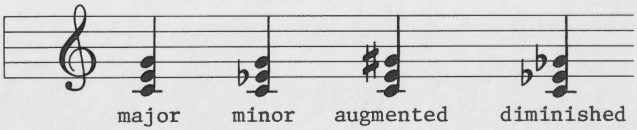
Objective: After completing this program, the student should be able to identify by ear arpeggiated major, minor, augmented, and diminished triads.

Prerequisites: Before using the program, the student should know the definitions of major, minor, augmented, and diminished triads and should be able to recognize major and minor thirds by ear.

Background Information: A triad in root position consists of three notes played together as a chord. The interval between the lowest and middle notes is a third, as is the interval between the middle and highest notes. The type of triad is determined by the types of thirds used. The chart below shows these:

Interval Between Lowest and Middle	Interval Between Middle and Highest	Triad Type
major 3rd	major 3rd	augmented
major 3rd	minor 3rd	major
minor 3rd	major 3rd	minor
minor 3rd	minor 3rd	diminished

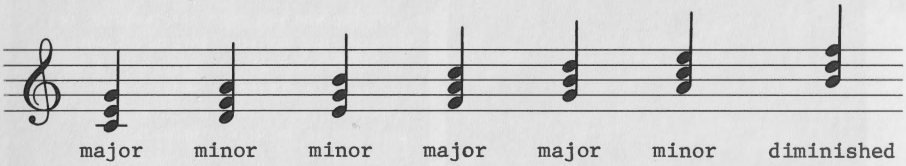
Examples:



Here is a chart showing the degrees of the scale and the type of triad for each degree:

Degree of Scale	Triad Type
1	major
2	minor
3	minor
4	major
5	major
6	minor
7	diminished

Examples:



An augmented triad doesn't occur naturally on any degree of the scale.

Here is a sample run for this program.

1

```
TRIADS

INSTRUCTIONS? (YES OR NO) ■
```

2

```
THIS PROGRAM PROVIDES EAR TRAINING IN
RECOGNIZING VARIOUS TYPES OF TRIADS.
IN EACH EXERCISE, YOU WILL HEAR A TRIAD
PLAYED AS A SERIES OF NOTES - ROOT,
THIRD, FIFTH, THIRD, AND ROOT.  YOU
WILL TRY TO IDENTIFY THE TRIAD.

PRESS 'RETURN' TO CONTINUE.■
```

3

```
THE EXERCISES COVER MAJOR, MINOR,
AUGMENTED, AND DIMINISHED TRIADS.  YOU
MAY DECIDE WHETHER OR NOT TO INCLUDE
THE AUGMENTED AND DIMINISHED TRIADS.

IN ADDITION, YOU MAY CHOOSE TO USE THE
SAME ROOT NOTE FOR ALL EXERCISES OR TO
USE DIFFERENT ROOT NOTES.

PRESS 'RETURN' TO CONTINUE.■
```

4

```
HOW MANY EXERCISES WOULD YOU LIKE? 2

WOULD YOU LIKE:
  1) ONLY MAJOR AND MINOR TRIADS,
  2) MAJOR, MINOR, AUGMENTED, AND
     DIMINISHED TRIADS?

(ENTER 1 OR 2) ■
```

5

```
WOULD YOU LIKE THE ROOT OF ALL THE
TRIADS TO BE THE SAME NOTE (FIXED) OR
WOULD YOU LIKE A DIFFERENT ROOT NOTE
FOR EACH?
ENTER 'F' FOR FIXED, 'D' FOR DIFFERENT.

■
```

6

```
ENTER YOUR ANSWERS USING THE NUMBERS
BELOW:

NUMBER  TRIAD
------  -----
  1     MAJOR
  2     MINOR
  3     AUGMENTED
  4     DIMINISHED

FOR EXAMPLE, IF THE TRIAD YOU HEAR IS
MINOR, ENTER THE NUMBER 2.

THE TRIADS WILL BEGIN AS SOON AS YOU
PRESS THE RETURN KEY.
```

7

```
ENTER YOUR ANSWERS USING THE NUMBERS
BELOW:

NUMBER  TRIAD
------  -----
  1     MAJOR
  2     MINOR
  3     AUGMENTED
  4     DIMINISHED

FOR EXAMPLE, IF THE TRIAD YOU HEAR IS
MINOR, ENTER THE NUMBER 2.

PRESS 'R' TO HEAR THE TRIAD AGAIN.  IF
YOU CAN IDENTIFY THE TRIAD,
ENTER ITS NUMBER (1-4). 1

CORRECT
TO HEAR THE TRIAD AGAIN, PRESS R. TO
CONTINUE, PRESS 'RETURN'.
```

VISUAL INTERVALS (MUSIC MENU I)

Objective: After completing this program, the student should be able to identify any written interval.

Prerequisites: The student should be familiar with note names and key signatures (see NAME THE NOTE and KEY SIGNATURES).

Background Information: Although most interval identification is eventually done by rote recognition, students can learn intervals by using the system described below.

There are two parts to the name of an interval. The first part is a word like major, minor, perfect, augmented, or diminished, and the second is related to a number such as 2nd, 3rd, 4th, etc.

The second part of the name is the easier part to determine as it can be done by sight. For example:

Interval

G to A
G to A*
G* to A*
G# to A
G# to A#

These are all 2nds. These intervals do not all sound alike, but since they move from a G to an A, they are, nevertheless, 2nds.

The difficult part, then, comes in identifying the type of 2nd. The type of interval is determined by the number of half steps between the two notes. Below is a chart showing the number of half steps and the most common interval names.

# of Half Steps	Interval
1	minor 2nd
2	major 2nd
3	minor 3rd
4	major 3rd
5	perfect 4th
6	augmented 4th/diminished 5th
7	perfect 5th
8	minor 6th
9	major 6th
1Ø	minor 7th
11	major 7th

One can determine the interval by looking at the notes and counting half steps. A way to simplify this further is to consider the intervals relative to the scale.

Looking at the C major scale, the notes are:

C D E F G A B C

In any major scale there are 5 whole steps and 2 half steps. The half steps occur between degrees 3 and 4 and between degrees 7 and 8. Therefore, in the C major scale, the half steps occur between E and F and between B and C.

We can identify most intervals by looking at the number of half (rather than whole) step intervals between them. For example, consider the interval from D to A. Looking at the scale:

C whole D whole E half F whole G whole A whole B half C

There is one interval which is a half rather than whole step between the D and the A, namely, the interval from E to F.

The chart below shows intervals by the number of half (rather than whole) step intervals they contain:

Interval	# of Half Step Intervals
minor 2nd	1
major 2nd	Ø
minor 3rd	1
major 3rd	Ø
perfect 4th	1
augmented 4th	Ø
diminished 5th	2
perfect 5th	1
minor 6th	2
major 6th	1
minor 7th	2
major 7th	1

It is also interesting to investigate the idea of intervals and their inversions. The inversion of an interval is formed by reversing or inverting the order of the notes. For example, the interval formed by going from D up to G is a perfect 4th, while the interval going from G up to D is a perfect 5th. A perfect 5th is the inversion of a perfect 4th, and similarly, a perfect 4th is the inversion of a perfect 5th.

The table below lists the intervals and their inversions.

Interval	Inversion
minor 2nd	major 7th
major 2nd	minor 7th
minor 3rd	major 6th
major 3rd	minor 6th
perfect 4th	perfect 5th
augmented 4th	diminished 5th
diminished 5th	augmented 4th
perfect 5th	perfect 4th
minor 6th	major 3rd
major 6th	minor 3rd
minor 7th	major 2nd
major 7th	minor 2nd

Understanding inversions can be helpful in identifying intervals. For example, if the interval formed by going from C up to E is a major 3rd, then the interval going from E up to C is the inverson of major 3rd, namely a minor 6th.

Here is a sample run for this program.

1

```
VISUAL INTERVALS


DO YOU WANT INSTRUCTIONS? (YES OR NO)
```

2

```
VISUAL INTERVALS

THIS PROGRAM WILL GIVE YOU PRACTICE IN
RECOGNIZNG INTERVALS IN WRITTEN MUSIC.
YOU WILL SELECT THE MAXIMUM NUMBER OF
SHARPS OR FLATS IN THE KEY SIGNATURE,
THE INTERVALS TO BE DRILLED, AND THE
NUMBER OF EXERCISES.


PRESS 'RETURN' TO CONTINUE.
```

3

```
WHAT IS THE MAXIMUM NUMBER OF
SHARPS OR FLATS YOU WANT IN THE KEY
SIGNATURE? (ENTER A NUMBER 0 - 7.)
```

4

```
WHICH INTERVALS DO YOU WISH TO USE?

  1. SECONDS          4. FIFTHS
  2. THIRDS           5. SIXTHS
  3. FOURTHS          6. SEVENTHS

ENTER THE NUMBER OF EACH INTERVAL YOU
WANT TO USE (ONE PER LINE).  WHEN YOU
HAVE FINISHED, JUST PRESS A RETURN.
>1
>2
>3
>4
>5
>6
>
```

5

```
HOW MANY PROBLEMS WOULD YOU LIKE?
```

6

```
YOU WILL SEE TWO NOTES ON A STAFF.  YOU
ARE TO DETERMINE THE INTERVAL BETWEEN
THE NOTES.  WHEN ANSWERING THE
QUESTIONS, USE THE ABBREVIATIONS BELOW:

ABBREVIATION INTERVAL
------------ --------
MI2          MINOR 2ND
MA2          MAJOR 2ND
MI3          MINOR 3RD
MA3          MAJOR 3RD
P4           PERFECT 4TH
A4           AUGMENTED 4TH
D5           DIMINISHED 5TH
P5           PERFECT 5TH
MI6          MINOR 6TH
MA6          MAJOR 6TH
MI7          MINOR 7TH
MA7          MAJOR 7TH
THESE ABBREVIATIONS WILL BE ON THE
SCREEN WHILE YOU ARE ANSWERING
QUESTIONS.

PRESS 'RETURN' TO CONTINUE.
```

7

```
WHAT IS THE INTERVAL? (MI2,MA2,MI3,
MA3,P4,A4,D5,P5,MI6,MA6,MI7,MA7) P5
NO, THE ANSWER IS D5
PRESS 'RETURN' TO CONTINUE.
```

WHOLE-HALF (MUSIC MENU II)

Objective: After completing this program, the student should be able to distinguish a half step from a whole step by ear.

Prerequisites: The student should know the definitions of whole and half steps.

Background Information: Being able to differentiate between whole and half steps is the key skill in aural scale identification.

Here is a sample run for this program.

1

```
                    WHOLE - HALF

THIS PROGRAM PROVIDES DRILL IN
RECOGNIZING WHOLE AND HALF STEP
INTERVALS BY EAR.


HOW MANY PROBLEMS WOULD YOU LIKE?
```

2

```
YOU WILL HEAR TWO TONES WHICH WILL
BE EITHER A WHOLE OR A HALF STEP
APART.  IF THE INTERVAL IS A WHOLE STEP,
ANSWER BY ENTERING THE LETTER, 'W'.
IF IT IS A HALF STEP, ANSWER BY
ENTERING THE LETTER, 'H'.



PRESS 'RETURN' TO HEAR THE NOTES.
```

3

```
YOU WILL HEAR TWO TONES WHICH WILL
BE EITHER A WHOLE OR A HALF STEP
APART.  IF THE INTERVAL IS A WHOLE STEP,
ANSWER BY ENTERING THE LETTER, 'W'.
IF IT IS A HALF STEP, ANSWER BY
ENTERING THE LETTER, 'H'.
IF YOU NEED TO HEAR THE TONES AGAIN,
PRESS 'R'.
--------------------------------
IS THE INTERVAL A WHOLE OR HALF STEP?
(ENTER W OR H) H

CORRECT
TO HEAR THE NOTES REPEATED, PRESS 'R'.
TO CONTINUE, PRESS 'RETURN'.
```

WRONG NOTE (MUSIC MENU II)

Objectives: After completing the program, the student should be able to look at a 5-note musical passage, hear it played, and determine which of the 5 performed notes did not match its written counterpart.

Prerequisites: The student should have some skills in interval recognition, both visual and aural (see AURAL INTERVALS and VISUAL INTERVALS).

Background Information: This program does not introduce new concepts, but rather reinforces concepts learned in programs such as VISUAL INTERVALS and AURAL INTERVALS.

Skills learned through WRONG NOTE strengthen sight reading ability and help students who may later be involved in teaching or conducting.

Here is a sample run for this program.

1

```
WRONG NOTE

IN THIS DRILL YOU WILL SEE A PHRASE OF
MUSIC AND THEN HEAR IT PLAYED.
WHEN IT IS PLAYED, ONE OF THE NOTES
WILL BE WRONG.  YOU MUST DETERMINE
WHICH OF THE NOTES (2-5) WAS INCORRECT.

PRESS 'RETURN' TO CONTINUE.
```

2

```
WHAT IS THE GREATEST NUMBER OF FLATS
YOU WANT IN THE KEY SIGNATURE? (0-7) 5

WHAT IS THE GREATEST NUMBER OF SHARPS
YOU WANT IN THE KEY SIGNATURE? (0-7) 5

WHAT IS THE LARGEST INTERVAL YOU WANT
IN THE PHRASE? (A 2ND IS INDICATED BY
THE NUMBER, 2, A 3RD BY 3, ETC.) 4

HOW MANY PROBLEMS WOULD YOU LIKE?2
```

3

```
IN THE EXERCISES THAT FOLLOW, YOU WILL
SEE A FIVE-NOTE PHRASE OF MUSIC.
STUDY THE PHRASE.  WHEN YOU ARE
FAMILIAR WITH IT, PRESS THE RETURN KEY
THE COMPUTER WILL PLAY THE PHRASE WITH
ONE INCORRECT NOTE.  THE INCORRECT NOTE
WILL NOT BE THE FIRST NOTE.  YOU WILL
BE ASKED TO IDENTIFY WHICH OF THE NOTES
(2-5) WAS INCORRECT.

PRESS 'RETURN' TO CONTINUE.
```

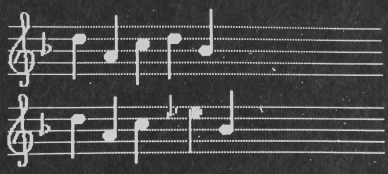
4

```
PRESS 'RETURN' TO HEAR THE MELODY.
```

5

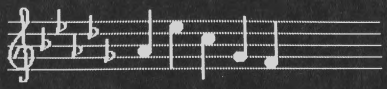
```
WHICH NOTE WAS WRONG - 2, 3, 4, OR 5? 4
PRESS 'RETURN' TO SEE WHAT WAS PLAYED.
```

6



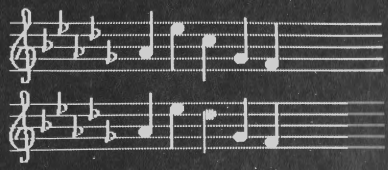
```
PRESS '1' TO HEAR THE FIRST LINE,
PRESS '2' TO HEAR THE SECOND, OR PRESS
'RETURN' TO CONTINUE.
```

7



```
WHICH NOTE WAS WRONG - 2, 3, 4, OR 5? 2
NO, THAT IS NOT RIGHT.
PRESS 'RETURN' TO SEE WHAT WAS PLAYED.
```

8



```
PRESS '1' TO HEAR THE FIRST LINE,
PRESS '2' TO HEAR THE SECOND, OR PRESS
'RETURN' TO CONTINUE.
```

APPENDIX C

SAMPLE EVALUATION FORMS

AURAL INTERVALS

NAME NUMBER OF PROBLEMS

MASTERY PERCENTAGE

INTERVALS	ORDER	SCORES	MASTERY

COUNTING

NAME NUMBER OF PROBLEMS

MASTERY PERCENTAGE

INPUT	SCORES									MASTERY
2/4										
3/4										
4/4										
5/4										
6/4										
3/8										
6/8										
9/8										
12/8										
ALL										

ENHARMONICS

NAME NUMBER OF PROBLEMS

MASTERY PERCENTAGE

SET	SCORES	MASTERY

FIND THE HALF

NAME NUMBER OF PROBLEMS

MASTERY PERCENTAGE

# OF NOTES	SCORES	MASTERY

KEY SIGNATURES

NAME NUMBER OF PROBLEMS

MASTERY PERCENTAGE

INPUT	SCORES	MASTERY
ALL MAJOR		
ALL MINOR		
MAJOR & MINOR		

MISSING NOTE

NAME NUMBER OF PROBLEMS

MASTERY PERCENTAGE

# SHARPS	# FLATS	GREATEST INTERVAL	SCORES	MASTERY

NAME THE NOTE

NAME NUMBER OF PROBLEMS

MASTERY PERCENTAGE

LEVEL	SCORES	MASTERY
	:	

NOTE TYPES

NAME NUMBER OF PROBLEMS

MASTERY PERCENTAGE

INPUT	SCORES										MASTERY	
ALL NOTES												
ALL RESTS												
NOTES & RESTS												

RHYTHM

NAME NUMBER OF PROBLEMS

MASTERY PERCENTAGE

LEVEL	SCORES	MASTERY
1		
2		
3		

RHYTHM PLAY

NAME NUMBER OF PROBLEMS

MASTERY PERCENTAGE

LEVEL	SCORES	MASTERY
1		
2		
3		

SCALES

NAME NUMBER OF PROBLEMS

MASTERY PERCENTAGE

SCALES ONLY OR SCALES & MODES	SCORES	MASTERY
SCALES ONLY		
SCALES & MODES		

SEVENTHS

NAME NUMBER OF PROBLEMS

MASTERY PERCENTAGE

MAJ., MIN., & DOM. ONLY OR ALL TYPES	ROOT	SCORES										MASTERY
MAJ, MIN, DOM	FIXED											
MAJ, MIN, DOM	RANDOM											
ALL TYPES	FIXED											
ALL TYPES	RANDOM											

TERMS

NAME NUMBER OF PROBLEMS

MASTERY PERCENTAGE

LEVEL	SCORES	MASTERY

TRIADS

NAME NUMBER OF PROBLEMS

MASTERY PERCENTAGE

MAJ. & MIN. OR ALL TYPES	ROOT	SCORES	MASTERY
MAJ. & MIN.	FIXED	| | | | | | | | | |	| |
MAJ. & MIN.	RANDOM	| | | | | | | | | |	| |
ALL TYPES	FIXED	| | | | | | | | | |	| |
ALL TYPES	RANDOM	| | | | | | | | | |	| |

VISUAL INTERVALS

NAME NUMBER OF PROBLEMS

MASTERY PERCENTAGE

INTERVALS	# FLATS & SHARPS	SCORES	MASTERY

WHOLE-HALF

NAME NUMBER OF PROBLEMS

MASTERY PERCENTAGE

SCORES									MASTERY	

WRONG NOTE

NAME NUMBER OF PROBLEMS

MASTERY PERCENTAGE

# SHARPS	# FLATS	GREATEST INTERVAL	SCORES	MASTERY

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